

EPHEMERIDES

10 19.9

10 20.0

| 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$       | $r$       | $\beta$ | $V$  | 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  |
|---------------|------------------------|-----------------|----------------|-----------|---------|------|---------------|------------------------|-----------------|----------------|----------|---------|------|
| <b>16984</b>  | Veillet                |                 | 10 19.9 231°03 | 3°5/17.4  | 18      |      | <b>402007</b> | 2003 QZ <sub>51</sub>  |                 | 10 19.9 9°43   | 9°3/26.4 | 17      |      |
| 9 18          | 2 4.21                 | + 5 38.5        | 1.437          | 2.325     | 14.8    | 18.3 | 9 18          | 2 7.07                 | +31 16.2        | 1.626          | 2.419    | 17.9    | 19.5 |
| 9 28          | 1 58.63                | + 4 28.8        | 1.373          | 2.320     | 10.6    | 18.1 | 9 28          | 2 1.05                 | +32 47.7        | 1.561          | 2.422    | 15.1    | 19.3 |
| 10 8          | 1 50.68                | + 3 11.0        | 1.332          | 2.314     | 6.1     | 17.8 | 10 8          | 1 52.25                | +33 55.8        | 1.515          | 2.427    | 12.3    | 19.2 |
| 10 18         | 1 41.27                | + 1 53.0        | 1.317          | 2.308     | 3.5     | 17.6 | 10 18         | 1 41.58                | +34 35.3        | 1.493          | 2.432    | 10.0    | 19.0 |
| 10 28         | 1 31.66                | + 0 44.2        | 1.329          | 2.302     | 6.7     | 17.8 | 10 28         | 1 30.45                | +34 44.8        | 1.495          | 2.439    | 9.3     | 19.0 |
| 11 7          | 1 23.16                | - 0 7.3         | 1.367          | 2.295     | 11.2    | 18.1 | 11 7          | 1 20.40                | +34 28.1        | 1.521          | 2.446    | 10.6    | 19.1 |
| 11 17         | 1 16.79                | - 0 36.6        | 1.428          | 2.289     | 15.4    | 18.3 | 11 17         | 1 12.71                | +33 53.0        | 1.572          | 2.455    | 13.0    | 19.3 |
| 11 27         | 1 13.22                | - 0 42.0        | 1.507          | 2.282     | 19.0    | 18.5 | 11 27         | 1 8.22                 | +33 9.7         | 1.643          | 2.465    | 15.6    | 19.5 |
| <b>177660</b> | 2005 EJ <sub>2</sub>   |                 | 10 19.9 232°96 | 11°7/8.6  | 17      |      | <b>83452</b>  | 2001 SG <sub>62</sub>  |                 | 10 19.9 331°71 | 1°6/18.1 | 18      |      |
| 9 18          | 2 2.41                 | - 7 39.8        | 1.161          | 2.065     | 16.3    | 19.0 | 9 18          | 1 56.00                | + 9 49.5        | 2.070          | 2.948    | 11.3    | 18.6 |
| 9 28          | 1 57.67                | -11 11.5        | 1.121          | 2.060     | 13.2    | 18.8 | 9 28          | 1 52.22                | + 8 27.5        | 1.994          | 2.936    | 8.0     | 18.4 |
| 10 8          | 1 50.25                | -14 36.6        | 1.105          | 2.055     | 11.7    | 18.7 | 10 8          | 1 46.90                | + 6 55.0        | 1.943          | 2.925    | 4.4     | 18.2 |
| 10 18         | 1 41.20                | -17 34.4        | 1.113          | 2.050     | 12.9    | 18.7 | 10 18         | 1 40.65                | + 5 17.8        | 1.920          | 2.914    | 1.6     | 18.0 |
| 10 28         | 1 31.99                | -19 48.2        | 1.145          | 2.045     | 15.9    | 18.9 | 10 28         | 1 34.25                | + 3 43.5        | 1.927          | 2.904    | 4.4     | 18.1 |
| 11 7          | 1 24.13                | -21 10.1        | 1.198          | 2.039     | 19.3    | 19.1 | 11 7          | 1 28.51                | + 2 19.3        | 1.962          | 2.894    | 8.1     | 18.3 |
| 11 17         | 1 18.72                | -21 41.2        | 1.267          | 2.033     | 22.5    | 19.3 | 11 17         | 1 24.14                | + 1 10.8        | 2.022          | 2.885    | 11.5    | 18.5 |
| 11 27         | 1 16.42                | -21 27.7        | 1.348          | 2.026     | 25.0    | 19.5 | 11 27         | 1 21.62                | + 0 21.7        | 2.105          | 2.876    | 14.4    | 18.7 |
| <b>406776</b> | 2008 PB <sub>21</sub>  |                 | 10 19.9 13°72  | 11°6/27.7 | 17      |      | <b>250000</b> | 2001 XB <sub>242</sub> |                 | 10 19.9 46°44  | 6°3/15.5 | 18      |      |
| 9 18          | 2 14.53                | +37 21.8        | 1.813          | 2.551     | 18.3    | 19.5 | 9 18          | 2 4.35                 | - 5 44.2        | 1.699          | 2.584    | 13.1    | 19.8 |
| 9 28          | 2 6.70                 | +39 32.6        | 1.746          | 2.556     | 16.1    | 19.3 | 9 28          | 1 58.19                | - 6 23.5        | 1.660          | 2.596    | 9.8     | 19.6 |
| 10 8          | 1 55.62                | +41 19.0        | 1.699          | 2.562     | 13.9    | 19.2 | 10 8          | 1 50.17                | - 6 55.9        | 1.643          | 2.609    | 7.1     | 19.5 |
| 10 18         | 1 42.16                | +42 33.2        | 1.675          | 2.569     | 12.2    | 19.1 | 10 18         | 1 41.18                | - 7 15.2        | 1.653          | 2.622    | 6.4     | 19.5 |
| 10 28         | 1 27.88                | +43 10.7        | 1.676          | 2.576     | 11.6    | 19.1 | 10 28         | 1 32.28                | - 7 16.7        | 1.690          | 2.636    | 8.3     | 19.6 |
| 11 7          | 1 14.60                | +43 13.7        | 1.701          | 2.585     | 12.3    | 19.2 | 11 7          | 1 24.48                | - 6 58.4        | 1.752          | 2.650    | 11.2    | 19.8 |
| 11 17         | 1 3.88                 | +42 49.7        | 1.749          | 2.594     | 13.8    | 19.3 | 11 17         | 1 18.56                | - 6 20.6        | 1.838          | 2.664    | 14.1    | 20.1 |
| 11 27         | 0 56.77                | +42 9.6         | 1.818          | 2.604     | 15.8    | 19.4 | 11 27         | 1 14.98                | - 5 25.4        | 1.943          | 2.678    | 16.6    | 20.3 |
| <b>517065</b> | 2013 CT <sub>40</sub>  |                 | 10 19.9 285°76 | 7°5/12.4  | 18      |      | <b>449509</b> | 2014 GV <sub>38</sub>  |                 | 10 19.9 296°49 | 2°0/21.4 | 18      |      |
| 9 18          | 2 0.68                 | - 6 52.3        | 1.795          | 2.682     | 12.3    | 21.1 | 9 18          | 2 5.82                 | +15 38.9        | 1.727          | 2.583    | 14.3    | 20.9 |
| 9 28          | 1 55.82                | - 8 30.2        | 1.726          | 2.661     | 9.6     | 20.9 | 9 28          | 1 59.67                | +15 54.3        | 1.651          | 2.577    | 10.7    | 20.6 |
| 10 8          | 1 49.03                | -10 4.5         | 1.683          | 2.640     | 7.8     | 20.8 | 10 8          | 1 51.27                | +15 57.4        | 1.598          | 2.570    | 6.6     | 20.4 |
| 10 18         | 1 41.00                | -11 26.2        | 1.665          | 2.619     | 7.9     | 20.8 | 10 18         | 1 41.41                | +15 49.0        | 1.572          | 2.564    | 2.6     | 20.1 |
| 10 28         | 1 32.70                | -12 26.7        | 1.674          | 2.598     | 10.1    | 20.8 | 10 28         | 1 31.24                | +15 32.1        | 1.573          | 2.558    | 3.7     | 20.2 |
| 11 7          | 1 25.19                | -13 0.5         | 1.707          | 2.576     | 13.0    | 21.0 | 11 7          | 1 21.98                | +15 11.6        | 1.602          | 2.552    | 8.0     | 20.4 |
| 11 17         | 1 19.32                | -13 5.8         | 1.762          | 2.555     | 16.0    | 21.1 | 11 17         | 1 14.64                | +14 53.2        | 1.656          | 2.546    | 12.1    | 20.7 |
| 11 27         | 1 15.73                | -12 43.8        | 1.834          | 2.534     | 18.6    | 21.3 | 11 27         | 1 9.94                 | +14 41.9        | 1.733          | 2.540    | 15.5    | 20.9 |
| <b>223457</b> | 2003 UD <sub>43</sub>  |                 | 10 19.9 304°98 | 0°5/20.4  | 17      |      | <b>488040</b> | 2015 UB <sub>44</sub>  |                 | 10 19.9 311°45 | 5°1/14.8 | 18      |      |
| 9 18          | 2 3.55                 | +11 57.9        | 2.197          | 3.055     | 11.6    | 19.8 | 9 18          | 1 59.04                | - 1 46.3        | 1.968          | 2.857    | 11.4    | 20.9 |
| 9 28          | 1 57.58                | +12 5.5         | 2.119          | 3.049     | 8.4     | 19.6 | 9 28          | 1 54.41                | - 3 0.2         | 1.906          | 2.849    | 8.4     | 20.7 |
| 10 8          | 1 49.90                | +12 5.7         | 2.066          | 3.042     | 4.9     | 19.4 | 10 8          | 1 48.13                | - 4 13.6        | 1.869          | 2.841    | 5.8     | 20.5 |
| 10 18         | 1 41.14                | +12 0.1         | 2.041          | 3.036     | 1.1     | 19.1 | 10 18         | 1 40.86                | - 5 19.7        | 1.859          | 2.833    | 5.3     | 20.4 |
| 10 28         | 1 32.18                | +11 51.2        | 2.045          | 3.030     | 3.0     | 19.3 | 10 28         | 1 33.47                | - 6 11.6        | 1.877          | 2.826    | 7.3     | 20.6 |
| 11 7          | 1 23.90                | +11 42.8        | 2.078          | 3.024     | 6.8     | 19.5 | 11 7          | 1 26.83                | - 6 44.7        | 1.921          | 2.819    | 10.3    | 20.7 |
| 11 17         | 1 17.10                | +11 38.3        | 2.139          | 3.018     | 10.2    | 19.7 | 11 17         | 1 21.67                | - 6 56.7        | 1.988          | 2.812    | 13.3    | 20.9 |
| 11 27         | 1 12.33                | +11 40.9        | 2.222          | 3.012     | 13.1    | 19.9 | 11 27         | 1 18.51                | - 6 47.6        | 2.076          | 2.805    | 15.8    | 21.1 |
| <b>395003</b> | 2009 BV <sub>119</sub> |                 | 10 19.9 316°82 | 1°6/21.1  | 18      |      | <b>437172</b> | 2012 VA <sub>63</sub>  |                 | 10 19.9 43°15  | 0°9/19.3 | 18      |      |
| 9 18          | 2 1.73                 | +15 47.3        | 1.519          | 2.388     | 15.2    | 21.2 | 9 18          | 2 1.58                 | +11 46.4        | 1.321          | 2.208    | 16.0    | 21.0 |
| 9 28          | 1 56.98                | +15 35.0        | 1.440          | 2.373     | 11.4    | 21.0 | 9 28          | 1 56.65                | +10 49.4        | 1.278          | 2.223    | 11.4    | 20.8 |
| 10 8          | 1 49.86                | +15 6.6         | 1.383          | 2.359     | 6.9     | 20.7 | 10 8          | 1 49.48                | + 9 39.2        | 1.257          | 2.240    | 6.2     | 20.5 |
| 10 18         | 1 41.16                | +14 24.6        | 1.351          | 2.345     | 2.3     | 20.4 | 10 18         | 1 41.08                | + 8 22.8        | 1.261          | 2.257    | 1.1     | 20.2 |
| 10 28         | 1 32.09                | +13 34.3        | 1.345          | 2.331     | 3.9     | 20.4 | 10 28         | 1 32.76                | + 7 9.3         | 1.291          | 2.274    | 4.7     | 20.5 |
| 11 7          | 1 23.94                | +12 43.1        | 1.365          | 2.318     | 8.8     | 20.7 | 11 7          | 1 25.76                | + 6 7.4         | 1.346          | 2.292    | 9.6     | 20.9 |
| 11 17         | 1 17.81                | +11 58.6        | 1.409          | 2.305     | 13.3    | 20.9 | 11 17         | 1 20.95                | + 5 23.2        | 1.425          | 2.311    | 13.9    | 21.2 |
| 11 27         | 1 14.45                | +11 27.1        | 1.475          | 2.293     | 17.2    | 21.2 | 11 27         | 1 18.83                | + 4 59.7        | 1.524          | 2.330    | 17.4    | 21.5 |
| <b>331052</b> | 2009 VF <sub>110</sub> |                 | 10 19.9 350°01 | 4°4/16.2  | 18      |      | <b>10639</b>  | Gleason                |                 | 10 20.0 119°03 | 1°3/20.9 | 18      |      |
| 9 18          | 1 59.98                | - 0 32.4        | 1.869          | 2.757     | 11.9    | 19.8 | 9 18          | 2 7.22                 | +16 24.1        | 1.498          | 2.357    | 15.9    | 17.9 |
| 9 28          | 1 55.12                | - 1 15.9        | 1.809          | 2.753     | 8.6     | 19.6 | 9 28          | 2 0.60                 | +15 50.2        | 1.443          | 2.372    | 11.7    | 17.7 |
| 10 8          | 1 48.53                | - 1 58.7        | 1.773          | 2.749     | 5.6     | 19.4 | 10 8          | 1 51.68                | +14 59.2        | 1.411          | 2.386    | 6.9     | 17.5 |
| 10 18         | 1 40.91                | - 2 35.1        | 1.764          | 2.745     | 4.5     | 19.3 | 10 18         | 1 41.45                | +13 55.1        | 1.405          | 2.400    | 2.0     | 17.2 |
| 10 28         | 1 33.18                | - 2 59.6        | 1.782          | 2.743     | 6.6     | 19.4 | 10 28         | 1 31.25                | +12 45.2        | 1.427          | 2.413    | 3.9     | 17.3 |
| 11 7          | 1 26.28                | - 3 8.2         | 1.827          | 2.740     | 9.8     | 19.6 | 11 7          | 1 22.36                | +11 38.0        | 1.476          | 2.425    | 8.6     | 17.7 |
| 11 17         | 1 20.96                | - 2 59.2        | 1.895          | 2.738     | 13.0    | 19.8 | 11 17         | 1 15.72                | +10 41.2        | 1.550          | 2.437    | 12.9    | 17.9 |
| 11 27         | 1 17.75                | - 2 32.5        | 1.984          | 2.737     | 15.7    | 20.0 | 11 27         | 1 11.89                | +10 0.1         | 1.646          | 2.449    | 16.4    | 18.2 |
| <b>481715</b> | 2008 EY <sub>11</sub>  |                 | 10 19.9 282°10 | 2°0/21.4  | 17      |      | <b>393009</b> | 2012 XZ <sub>138</sub> |                 | 10 20.0 319°38 | 3°7/22.8 | 18      |      |
| 9 18          | 2 6.42                 | +15 25.2        | 1.982          | 2.830     | 13.1    | 21.3 | 9 18          | 2 2.71                 | +20 40.2        | 1.539          | 2.390    | 16.0    | 20.4 |
| 9 28          | 1 59.98                | +15 48.0        | 1.893          | 2.814     | 9.8     | 21.1 | 9 28          | 1 57.72                | +20 45.1        | 1.462          | 2.380    | 12.4    | 20.1 |
| 10 8          | 1 51.42                | +16 0.6         | 1.827          | 2.797     | 6.1     | 20.8 | 10 8          | 1 50.30                | +20 30.5        | 1.405          | 2.370    | 8.2     | 19.9 |
| 10 18         | 1 41.43                | +16 3.2         | 1.789          | 2.781     | 2.5     | 20.6 | 10 18         | 1 41.26                | +19 56.8        | 1.373          | 2.360    | 4.5     | 19.6 |
| 10 28         | 1 31.02                | +15 57.9        | 1.780          | 2.764     | 3.5     | 20.6 | 10 28         | 1 31.86                | +19 7.9         | 1.367          | 2.350    | 4.6     | 19.6 |
| 11 7          | 1 21.31                | +15 48.5        | 1.799          | 2.747     | 7.5     | 20.8 | 11 7          | 1 23.44                | +18 11.1        | 1.387          | 2.341    | 8.5     | 19.8 |
| 11 17         | 1 13.28                | +15 39.4        | 1.846          | 2.730     | 11.3    | 21.0 | 11 17         | 1 17.10                | +17 14.9        | 1.432          | 2.333    | 12.8    | 20.1 |
| 11 27         | 1 7.65                 | +15 35.3        | 1.915          | 2.714     | 14.6    | 21.2 | 11 27         | 1 13.61                | +16 27.2        | 1.498          | 2.325    | 16.6    | 20.3 |
| <b>172756</b> | 2004 DJ <sub>12</sub>  |                 | 10 19.9 263°42 | 0°1/20.1  | 18      |      | <b>330948</b> | 2009 SH <sub>283</sub> |                 | 10 20.0 338°08 | 2°5/18.1 | 17      |      |
| 9 18          | 2 3.23                 | +12 1.9         | 2.0            |           |         |      |               |                        |                 |                |          |         |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$         | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$         | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------|-------------|---------|------|---------------|-------------------------------|-----------------|----------|-------------|---------|------|
| <b>80632</b>  | 2000 <i>AL</i> <sub>205</sub> | 10 20.0 239°16  |          | 0°1/20.1 18 |         |      | <b>316671</b> | 1995 <i>RN</i>                | 10 20.0 115°63  |          | 1°4/21.3 18 |         |      |
| 9 18          | 2 4.30                        | +13 7.5         | 1.660    | 2.528       | 14.2    | 20.4 | 9 18          | 2 3.30                        | +17 27.3        | 1.869    | 2.719       | 13.7    | 20.6 |
| 9 28          | 1 58.58                       | +12 34.6        | 1.585    | 2.519       | 10.4    | 20.2 | 9 28          | 1 57.49                       | +16 47.5        | 1.809    | 2.732       | 10.1    | 20.4 |
| 10 8          | 1 50.65                       | +11 48.4        | 1.533    | 2.511       | 5.9     | 19.9 | 10 8          | 1 49.84                       | +15 52.4        | 1.773    | 2.744       | 6.0     | 20.2 |
| 10 18         | 1 41.32                       | +10 52.5        | 1.506    | 2.502       | 1.1     | 19.5 | 10 18         | 1 41.18                       | +14 45.5        | 1.763    | 2.757       | 2.0     | 20.0 |
| 10 28         | 1 31.72                       | +9 53.2         | 1.508    | 2.493       | 3.9     | 19.7 | 10 28         | 1 32.51                       | +13 32.9        | 1.783    | 2.768       | 3.3     | 20.1 |
| 11 7          | 1 23.07                       | +8 57.9         | 1.538    | 2.483       | 8.7     | 20.0 | 11 7          | 1 24.82                       | +12 21.9        | 1.831    | 2.780       | 7.3     | 20.4 |
| 11 17         | 1 16.33                       | +8 13.2         | 1.592    | 2.474       | 12.9    | 20.2 | 11 17         | 1 18.90                       | +11 18.9        | 1.906    | 2.791       | 11.0    | 20.6 |
| 11 27         | 1 12.20                       | +7 44.0         | 1.668    | 2.464       | 16.5    | 20.5 | 11 27         | 1 15.25                       | +10 29.2        | 2.003    | 2.802       | 14.1    | 20.8 |
| <b>301250</b> | 2009 <i>BP</i> <sub>49</sub>  | 10 20.0 140°26  |          | 3°4/23.1 18 |         |      | <b>337288</b> | 2000 <i>WL</i> <sub>156</sub> | 10 20.0 356°87  |          | 7°0/24.6 18 |         |      |
| 9 18          | 2 4.15                        | +21 53.7        | 2.017    | 2.844       | 13.7    | 21.3 | 9 18          | 1 55.92                       | +24 24.0        | 0.994    | 1.868       | 21.0    | 19.1 |
| 9 28          | 1 58.14                       | +21 51.8        | 1.946    | 2.850       | 10.5    | 21.1 | 9 28          | 1 53.68                       | +24 59.1        | 0.935    | 1.860       | 16.8    | 18.8 |
| 10 8          | 1 50.25                       | +21 33.1        | 1.899    | 2.855       | 7.1     | 20.9 | 10 8          | 1 48.37                       | +25 4.2         | 0.892    | 1.853       | 12.2    | 18.5 |
| 10 18         | 1 41.23                       | +20 58.6        | 1.878    | 2.861       | 4.0     | 20.7 | 10 18         | 1 40.98                       | +24 37.3        | 0.869    | 1.849       | 8.1     | 18.3 |
| 10 28         | 1 32.09                       | +20 11.8        | 1.885    | 2.866       | 4.0     | 20.7 | 10 28         | 1 33.18                       | +23 42.2        | 0.867    | 1.847       | 7.3     | 18.3 |
| 11 7          | 1 23.83                       | +19 18.4        | 1.921    | 2.870       | 7.0     | 20.9 | 11 7          | 1 26.77                       | +22 29.7        | 0.886    | 1.848       | 10.8    | 18.4 |
| 11 17         | 1 17.28                       | +18 25.0        | 1.984    | 2.875       | 10.3    | 21.1 | 11 17         | 1 23.13                       | +21 13.1        | 0.926    | 1.851       | 15.4    | 18.7 |
| 11 27         | 1 13.02                       | +17 37.7        | 2.070    | 2.879       | 13.3    | 21.3 | 11 27         | 1 23.08                       | +20 5.1         | 0.984    | 1.856       | 19.7    | 19.0 |
| <b>477288</b> | 2009 <i>ST</i> <sub>157</sub> | 10 20.0 10°51   |          | 2°7/21.3 18 |         |      | <b>178024</b> | 2006 <i>RU</i> <sub>30</sub>  | 10 20.0 342°93  |          | 3°6/22.1 18 |         |      |
| 9 18          | 2 8.07                        | +14 40.3        | 1.209    | 2.084       | 17.9    | 20.5 | 9 18          | 2 6.25                        | +17 44.3        | 1.558    | 2.413       | 15.7    | 19.7 |
| 9 28          | 2 1.91                        | +15 23.3        | 1.150    | 2.085       | 13.4    | 20.3 | 9 28          | 2 0.28                        | +18 29.2        | 1.484    | 2.405       | 12.0    | 19.5 |
| 10 8          | 1 52.76                       | +15 52.5        | 1.112    | 2.087       | 8.2     | 20.0 | 10 8          | 1 51.76                       | +19 0.6         | 1.432    | 2.398       | 7.8     | 19.2 |
| 10 18         | 1 41.69                       | +16 7.6         | 1.097    | 2.090       | 3.3     | 19.7 | 10 18         | 1 41.55                       | +19 17.2        | 1.405    | 2.392       | 4.1     | 19.0 |
| 10 28         | 1 30.32                       | +16 11.2        | 1.108    | 2.093       | 4.8     | 19.8 | 10 28         | 1 30.92                       | +19 20.6        | 1.404    | 2.387       | 4.7     | 19.0 |
| 11 7          | 1 20.36                       | +16 8.9         | 1.143    | 2.098       | 9.9     | 20.1 | 11 7          | 1 21.27                       | +19 15.0        | 1.431    | 2.382       | 8.6     | 19.3 |
| 11 17         | 1 13.10                       | +16 7.0         | 1.202    | 2.103       | 14.7    | 20.4 | 11 17         | 1 13.76                       | +19 6.2         | 1.481    | 2.378       | 12.8    | 19.5 |
| 11 27         | 1 9.31                        | +16 11.7        | 1.280    | 2.109       | 18.7    | 20.7 | 11 27         | 1 9.19                        | +19 0.6         | 1.554    | 2.374       | 16.4    | 19.7 |
| <b>88840</b>  | 2001 <i>SC</i> <sub>177</sub> | 10 20.0 198°02  |          | 2°3/17.9 18 |         |      | <b>104075</b> | 2000 <i>EE</i> <sub>27</sub>  | 10 20.0 91°89   |          | 0°7/20.6 17 |         |      |
| 9 18          | 2 3.60                        | +6 38.7         | 1.866    | 2.742       | 12.5    | 19.5 | 9 18          | 2 5.97                        | +14 20.5        | 1.554    | 2.419       | 15.2    | 20.2 |
| 9 28          | 1 57.75                       | +5 43.4         | 1.799    | 2.740       | 8.9     | 19.3 | 9 28          | 1 59.62                       | +13 54.9        | 1.503    | 2.435       | 11.0    | 20.0 |
| 10 8          | 1 50.04                       | +4 41.5         | 1.757    | 2.737       | 5.0     | 19.0 | 10 8          | 1 51.11                       | +13 15.5        | 1.474    | 2.451       | 6.3     | 19.8 |
| 10 18         | 1 41.20                       | +3 38.3         | 1.742    | 2.734       | 2.3     | 18.9 | 10 18         | 1 41.39                       | +12 26.0        | 1.472    | 2.467       | 1.5     | 19.5 |
| 10 28         | 1 32.24                       | +2 40.6         | 1.756    | 2.730       | 5.0     | 19.0 | 10 28         | 1 31.72                       | +11 33.0        | 1.497    | 2.483       | 3.8     | 19.7 |
| 11 7          | 1 24.15                       | +1 54.3         | 1.798    | 2.726       | 9.0     | 19.3 | 11 7          | 1 23.27                       | +10 43.4        | 1.550    | 2.498       | 8.4     | 20.0 |
| 11 17         | 1 17.76                       | +1 23.8         | 1.865    | 2.722       | 12.6    | 19.5 | 11 17         | 1 16.95                       | +10 3.6         | 1.628    | 2.513       | 12.5    | 20.3 |
| 11 27         | 1 13.62                       | +1 11.2         | 1.953    | 2.716       | 15.6    | 19.7 | 11 27         | 1 13.28                       | +9 38.0         | 1.727    | 2.528       | 15.8    | 20.6 |
| <b>355291</b> | 2007 <i>RT</i> <sub>155</sub> | 10 20.0 12°39   |          | 1°8/16.7 18 |         |      | <b>523296</b> | 2017 <i>BG</i> <sub>82</sub>  | 10 20.0 247°35  |          | 1°4/18.6 18 |         |      |
| 9 18          | 1 52.83                       | +2 54.8         | 4.124    | 4.997       | 6.3     | 20.7 | 9 18          | 2 0.34                        | +7 49.8         | 2.222    | 3.094       | 10.9    | 21.4 |
| 9 28          | 1 49.28                       | +2 10.7         | 4.059    | 4.998       | 4.4     | 20.5 | 9 28          | 1 55.22                       | +7 11.4         | 2.151    | 3.090       | 7.8     | 21.2 |
| 10 8          | 1 45.02                       | +1 25.4         | 4.021    | 4.999       | 2.6     | 20.4 | 10 8          | 1 48.56                       | +6 26.9         | 2.105    | 3.086       | 4.3     | 20.9 |
| 10 18         | 1 40.34                       | +0 41.6         | 4.014    | 5.000       | 1.8     | 20.3 | 10 18         | 1 40.97                       | +5 40.4         | 2.087    | 3.081       | 1.5     | 20.7 |
| 10 28         | 1 35.63                       | +0 1.8          | 4.037    | 5.001       | 3.1     | 20.4 | 10 28         | 1 33.27                       | +4 56.5         | 2.098    | 3.077       | 3.9     | 20.9 |
| 11 7          | 1 31.24                       | -0 31.7         | 4.089    | 5.002       | 4.9     | 20.6 | 11 7          | 1 26.25                       | +4 20.1         | 2.138    | 3.072       | 7.4     | 21.1 |
| 11 17         | 1 27.52                       | -0 56.9         | 4.169    | 5.003       | 6.7     | 20.7 | 11 17         | 1 20.60                       | +3 54.8         | 2.204    | 3.067       | 10.6    | 21.3 |
| 11 27         | 1 24.73                       | -1 12.9         | 4.274    | 5.004       | 8.2     | 20.8 | 11 27         | 1 16.82                       | +3 42.9         | 2.293    | 3.063       | 13.4    | 21.5 |
| <b>476983</b> | 2008 <i>YE</i> <sub>59</sub>  | 10 20.0 269°78  |          | 0°6/20.5 18 |         |      | <b>488685</b> | 2003 <i>UK</i> <sub>391</sub> | 10 20.0 279°10  |          | 5°0/15.5 17 |         |      |
| 9 18          | 2 3.06                        | +13 52.4        | 1.839    | 2.701       | 13.3    | 22.0 | 9 18          | 2 3.70                        | -5 40.0         | 2.362    | 3.234       | 10.4    | 21.6 |
| 9 28          | 1 57.59                       | +13 30.8        | 1.756    | 2.687       | 9.8     | 21.7 | 9 28          | 1 57.57                       | -6 6.8          | 2.287    | 3.218       | 7.9     | 21.4 |
| 10 8          | 1 50.08                       | +12 56.7        | 1.696    | 2.672       | 5.7     | 21.4 | 10 8          | 1 49.87                       | -6 28.9         | 2.239    | 3.202       | 5.7     | 21.2 |
| 10 18         | 1 41.23                       | +12 13.0        | 1.663    | 2.658       | 1.3     | 21.1 | 10 18         | 1 41.21                       | -6 41.9         | 2.218    | 3.186       | 5.1     | 21.2 |
| 10 28         | 1 32.08                       | +11 24.5        | 1.658    | 2.643       | 3.5     | 21.2 | 10 28         | 1 32.38                       | -6 41.9         | 2.226    | 3.170       | 6.7     | 21.2 |
| 11 7          | 1 23.71                       | +10 37.4        | 1.681    | 2.628       | 7.9     | 21.5 | 11 7          | 1 24.20                       | -6 26.5         | 2.263    | 3.154       | 9.3     | 21.4 |
| 11 17         | 1 17.06                       | +9 57.8         | 1.729    | 2.613       | 12.0    | 21.7 | 11 17         | 1 17.37                       | -5 55.1         | 2.324    | 3.138       | 11.9    | 21.5 |
| 11 27         | 1 12.79                       | +9 30.6         | 1.800    | 2.597       | 15.5    | 21.9 | 11 27         | 1 12.43                       | -5 8.3          | 2.407    | 3.122       | 14.3    | 21.7 |
| <b>492764</b> | 2014 <i>QA</i> <sub>174</sub> | 10 20.0 302°35  |          | 2°5/17.3 17 |         |      | <b>125273</b> | 2001 <i>VA</i> <sub>8</sub>   | 10 20.0 169°46  |          | 2°1/18.4 18 |         |      |
| 9 18          | 1 58.33                       | +5 34.2         | 2.137    | 3.018       | 10.9    | 21.4 | 9 18          | 2 5.87                        | +6 5.4          | 1.750    | 2.626       | 13.2    | 20.2 |
| 9 28          | 1 53.83                       | +4 32.0         | 2.065    | 3.009       | 7.8     | 21.2 | 9 28          | 1 59.47                       | +5 37.1         | 1.688    | 2.628       | 9.4     | 20.0 |
| 10 8          | 1 47.80                       | +3 24.3         | 2.019    | 3.000       | 4.4     | 21.0 | 10 8          | 1 51.04                       | +5 3.7          | 1.649    | 2.630       | 5.3     | 19.7 |
| 10 18         | 1 40.83                       | +2 16.4         | 2.001    | 2.991       | 2.5     | 20.9 | 10 18         | 1 41.41                       | +4 29.6         | 1.638    | 2.631       | 2.1     | 19.5 |
| 10 28         | 1 33.72                       | +1 14.4         | 2.012    | 2.983       | 4.9     | 21.0 | 10 28         | 1 31.68                       | +4 0.5          | 1.655    | 2.633       | 4.9     | 19.7 |
| 11 7          | 1 27.29                       | +0 23.8         | 2.050    | 2.975       | 8.3     | 21.2 | 11 7          | 1 22.94                       | +3 41.2         | 1.700    | 2.633       | 9.0     | 20.0 |
| 11 17         | 1 22.21                       | -0 11.5         | 2.114    | 2.966       | 11.5    | 21.4 | 11 17         | 1 16.05                       | +3 35.1         | 1.770    | 2.634       | 12.8    | 20.2 |
| 11 27         | 1 19.01                       | -0 29.5         | 2.200    | 2.958       | 14.2    | 21.6 | 11 27         | 1 11.61                       | +3 43.9         | 1.861    | 2.634       | 15.9    | 20.4 |
| <b>325608</b> | 2009 <i>SC</i> <sub>216</sub> | 10 20.0 211°44  |          | 1°2/21.1 18 |         |      | <b>442538</b> | 2011 <i>WJ</i> <sub>151</sub> | 10 20.0 88°22   |          | 7°8/28.7 18 |         |      |
| 9 18          | 2 2.74                        | +14 56.3        | 2.348    | 3.196       | 11.3    | 20.4 | 9 18          | 2 4.45                        | +35 57.8        | 1.999    | 2.753       | 16.3    | 20.6 |
| 9 28          | 1 56.91                       | +14 55.8        | 2.272    | 3.194       | 8.3     | 20.2 | 9 28          | 1 58.55                       | +36 6.3         | 1.932    | 2.766       | 13.8    | 20.4 |
| 10 8          | 1 49.50                       | +14 45.8        | 2.220    | 3.192       | 5.0     | 20.0 | 10 8          | 1 50.55                       | +35 48.1        | 1.885    | 2.779       | 11.2    | 20.3 |
| 10 18         | 1 41.12                       | +14 27.8        | 2.197    | 3.190       | 1.7     | 19.7 | 10 18         | 1 41.33                       | +35 1.6         | 1.860    | 2.793       | 8.8     | 20.2 |
| 10 28         | 1 32.58                       | +14 4.7         | 2.203    | 3.188       | 2.8     | 19.8 | 10 28         | 1 32.04                       | +33 49.3        | 1.862    | 2.806       | 7.8     | 20.1 |
| 11 7          | 1 24.72                       | +13 40.4        | 2.239    | 3.186       | 6.3     | 20.0 | 11 7          | 1 23.85                       | +32 18.0        | 1.890    | 2.819       | 8.6     | 20.2 |
| 11 17         | 1 18.23                       | +13 19.0        | 2.302    | 3.183       | 9.5     | 20.3 | 11 17         | 1 17.65                       | +30 36.8        | 1.945    | 2.832       | 10.7    | 20.4 |
| 11 27         | 1 13.67                       | +13 4.1         | 2.389    | 3.181       | 12.3    | 20.4 | 11 27         | 1 13.99                       | +28 55.4        | 2.024    | 2.845       | 13.1    | 20.6 |
| <b>343718</b> | 2011 <i>EP</i> <sub>66</sub>  | 10 20.0 130°88  |          | 1°1/19.0 17 |         |      | <b>72616</b>  | 2001 <i>FO</i> <sub>21</sub>  | 10 20.0 87°33   |          | 2°8/17.1 18 |         |      |
| 9 18          | 2 4.38                        | +9 59.0         | 1.778    | 2.649       | 13.3    | 21.7 | 9             |                               |                 |          |             |         |      |

EPHEMERIDES

10 20.0

10 20.0

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  | 2020          | $\alpha_{2000}$                | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------------|----------|---------|------|---------------|--------------------------------|-----------------|----------------|----------|---------|------|
| <b>349853</b> | 2009 <i>DX</i> <sub>15</sub>  |                 | 10 20.0 280°65 | 0°6/20.5 | 18      |      | <b>23148</b>  | 2000 <i>AR</i> <sub>242</sub>  |                 | 10 20.0 110°86 | 4°4/15.6 | 18      |      |
| 9 18          | 2 2.90                        | +13 50.2        | 1.812          | 2.675    | 13.4    | 21.1 | 9 18          | 2 3.00                         | - 1 30.6        | 2.173          | 3.050    | 10.9    | 18.4 |
| 9 28          | 1 57.54                       | +13 30.5        | 1.727          | 2.659    | 9.9     | 20.9 | 9 28          | 1 56.93                        | - 2 33.0        | 2.132          | 3.070    | 7.9     | 18.2 |
| 10 8          | 1 50.10                       | +12 58.3        | 1.665          | 2.642    | 5.8     | 20.6 | 10 8          | 1 49.43                        | - 3 33.3        | 2.118          | 3.089    | 5.3     | 18.1 |
| 10 18         | 1 41.29                       | +12 16.3        | 1.630          | 2.625    | 1.3     | 20.2 | 10 18         | 1 41.17                        | - 4 26.0        | 2.132          | 3.108    | 4.5     | 18.1 |
| 10 28         | 1 32.14                       | +11 29.3        | 1.623          | 2.608    | 3.6     | 20.4 | 10 28         | 1 33.00                        | - 5 6.0         | 2.176          | 3.126    | 6.4     | 18.3 |
| 11 7          | 1 23.76                       | +10 43.6        | 1.643          | 2.591    | 8.0     | 20.6 | 11 7          | 1 25.70                        | - 5 29.7        | 2.246          | 3.144    | 9.1     | 18.5 |
| 11 17         | 1 17.11                       | +10 5.2         | 1.690          | 2.574    | 12.2    | 20.8 | 11 17         | 1 19.88                        | - 5 36.0        | 2.342          | 3.161    | 11.7    | 18.7 |
| 11 27         | 1 12.87                       | + 9 39.2        | 1.758          | 2.557    | 15.7    | 21.0 | 11 27         | 1 15.97                        | - 5 25.1        | 2.459          | 3.178    | 13.9    | 18.9 |
| <b>272552</b> | 2005 <i>UE</i> <sub>419</sub> |                 | 10 20.0 170°98 | 1°8/18.5 | 17      |      | <b>514990</b> | 2009 <i>HY</i> <sub>4</sub>    |                 | 10 20.0 239°46 | 0°9/19.3 | 18      |      |
| 9 18          | 2 4.79                        | + 7 35.0        | 1.902          | 2.773    | 12.5    | 21.8 | 9 18          | 2 6.49                         | + 7 43.8        | 1.999          | 2.865    | 12.2    | 21.5 |
| 9 28          | 1 58.56                       | + 6 52.7        | 1.838          | 2.777    | 8.9     | 21.5 | 9 28          | 1 59.85                        | + 7 43.7        | 1.923          | 2.858    | 8.8     | 21.3 |
| 10 8          | 1 50.49                       | + 6 3.8         | 1.799          | 2.779    | 4.9     | 21.3 | 10 8          | 1 51.29                        | + 7 38.6        | 1.873          | 2.852    | 4.9     | 21.1 |
| 10 18         | 1 41.34                       | + 5 12.8        | 1.788          | 2.782    | 1.8     | 21.1 | 10 18         | 1 41.52                        | + 7 31.1        | 1.850          | 2.846    | 1.1     | 20.8 |
| 10 28         | 1 32.10                       | + 4 25.7        | 1.806          | 2.783    | 4.5     | 21.3 | 10 28         | 1 31.54                        | + 7 24.7        | 1.857          | 2.839    | 3.8     | 21.0 |
| 11 7          | 1 23.77                       | + 3 48.0        | 1.852          | 2.784    | 8.5     | 21.5 | 11 7          | 1 22.36                        | + 7 23.0        | 1.893          | 2.832    | 7.9     | 21.2 |
| 11 17         | 1 17.14                       | + 3 23.5        | 1.923          | 2.785    | 12.0    | 21.8 | 11 17         | 1 14.84                        | + 7 28.9        | 1.955          | 2.825    | 11.5    | 21.4 |
| 11 27         | 1 12.78                       | + 3 14.6        | 2.017          | 2.785    | 15.0    | 22.0 | 11 27         | 1 9.58                         | + 7 44.8        | 2.041          | 2.818    | 14.6    | 21.6 |
| <b>179797</b> | 2002 <i>TH</i> <sub>33</sub>  |                 | 10 20.0 84°90  | 0°4/20.3 | 18      |      | <b>169095</b> | 2001 <i>KT</i> <sub>36</sub>   |                 | 10 20.0 64°74  | 6°6/15.7 | 18      |      |
| 9 18          | 2 6.56                        | +14 4.7         | 1.450          | 2.319    | 15.9    | 20.4 | 9 18          | 2 7.17                         | - 6 32.1        | 1.660          | 2.540    | 13.6    | 19.8 |
| 9 28          | 2 0.07                        | +13 27.1        | 1.406          | 2.340    | 11.4    | 20.2 | 9 28          | 2 0.18                         | - 7 7.8         | 1.626          | 2.560    | 10.2    | 19.7 |
| 10 8          | 1 51.36                       | +12 35.0        | 1.384          | 2.362    | 6.5     | 20.0 | 10 8          | 1 51.31                        | - 7 35.2        | 1.616          | 2.580    | 7.4     | 19.5 |
| 10 18         | 1 41.47                       | +11 33.5        | 1.388          | 2.384    | 1.3     | 19.7 | 10 18         | 1 41.49                        | - 7 48.4        | 1.633          | 2.600    | 6.6     | 19.5 |
| 10 28         | 1 31.71                       | +10 30.1        | 1.420          | 2.405    | 4.0     | 19.9 | 10 28         | 1 31.87                        | - 7 43.1        | 1.676          | 2.620    | 8.5     | 19.7 |
| 11 7          | 1 23.33                       | + 9 32.7        | 1.478          | 2.426    | 8.8     | 20.3 | 11 7          | 1 23.49                        | - 7 17.7        | 1.746          | 2.641    | 11.4    | 19.9 |
| 11 17         | 1 17.19                       | + 8 47.8        | 1.561          | 2.446    | 13.0    | 20.6 | 11 17         | 1 17.10                        | - 6 33.4        | 1.838          | 2.661    | 14.2    | 20.2 |
| 11 27         | 1 13.80                       | + 8 19.5        | 1.665          | 2.466    | 16.4    | 20.8 | 11 27         | 1 13.17                        | - 5 32.6        | 1.951          | 2.681    | 16.7    | 20.4 |
| <b>400877</b> | 2010 <i>OT</i> <sub>120</sub> |                 | 10 20.0 71°53  | 4°4/23.8 | 18      |      | <b>321325</b> | 2009 <i>HW</i> <sub>75</sub>   |                 | 10 20.0 83°21  | 1°1/19.2 | 17      |      |
| 9 18          | 2 5.57                        | +23 22.5        | 2.016          | 2.835    | 14.0    | 20.7 | 9 18          | 2 5.13                         | +11 52.9        | 1.333          | 2.213    | 16.2    | 20.9 |
| 9 28          | 1 59.21                       | +23 49.5        | 1.951          | 2.846    | 11.0    | 20.5 | 9 28          | 1 59.18                        | +10 43.3        | 1.291          | 2.233    | 11.5    | 20.7 |
| 10 8          | 1 50.90                       | +23 59.8        | 1.908          | 2.857    | 7.7     | 20.3 | 10 8          | 1 50.92                        | + 9 20.1        | 1.270          | 2.252    | 6.3     | 20.5 |
| 10 18         | 1 41.41                       | +23 53.1        | 1.892          | 2.868    | 5.0     | 20.2 | 10 18         | 1 41.44                        | + 7 50.9        | 1.275          | 2.271    | 1.3     | 20.2 |
| 10 28         | 1 31.79                       | +23 31.5        | 1.904          | 2.879    | 4.7     | 20.2 | 10 28         | 1 32.11                        | + 6 25.6        | 1.307          | 2.290    | 4.9     | 20.5 |
| 11 7          | 1 23.08                       | +22 59.6        | 1.944          | 2.889    | 7.2     | 20.4 | 11 7          | 1 24.18                        | + 5 13.7        | 1.366          | 2.308    | 9.9     | 20.8 |
| 11 17         | 1 16.15                       | +22 23.4        | 2.010          | 2.900    | 10.2    | 20.6 | 11 17         | 1 18.57                        | + 4 21.4        | 1.448          | 2.327    | 14.2    | 21.1 |
| 11 27         | 1 11.57                       | +21 49.2        | 2.100          | 2.911    | 13.1    | 20.8 | 11 27         | 1 15.76                        | + 3 51.6        | 1.550          | 2.345    | 17.7    | 21.4 |
| <b>512051</b> | 2015 <i>MX</i> <sub>91</sub>  |                 | 10 20.0 107°77 | 7°8/12.8 | 18      |      | <b>399964</b> | 2006 <i>BW</i> <sub>70</sub>   |                 | 10 20.0 3°14   | 4°6/23.5 | 17      |      |
| 9 18          | 2 4.04                        | -11 28.4        | 2.012          | 2.884    | 11.9    | 21.3 | 9 18          | 2 3.38                         | +22 12.8        | 1.748          | 2.584    | 15.1    | 20.4 |
| 9 28          | 1 57.75                       | -12 43.4        | 1.982          | 2.901    | 9.5     | 21.2 | 9 28          | 1 57.98                        | +22 46.0        | 1.678          | 2.584    | 11.8    | 20.2 |
| 10 8          | 1 49.89                       | -13 47.5        | 1.977          | 2.919    | 8.0     | 21.2 | 10 8          | 1 50.38                        | +23 2.0         | 1.629          | 2.584    | 8.2     | 20.0 |
| 10 18         | 1 41.23                       | -14 34.1        | 1.999          | 2.936    | 8.0     | 21.2 | 10 18         | 1 41.39                        | +23 0.1         | 1.605          | 2.585    | 5.2     | 19.8 |
| 10 28         | 1 32.68                       | -14 58.2        | 2.047          | 2.952    | 9.6     | 21.3 | 10 28         | 1 32.13                        | +22 42.3        | 1.609          | 2.586    | 5.0     | 19.8 |
| 11 7          | 1 25.13                       | -14 58.1        | 2.120          | 2.968    | 11.7    | 21.5 | 11 7          | 1 23.80                        | +22 13.6        | 1.639          | 2.588    | 7.9     | 20.0 |
| 11 17         | 1 19.22                       | -14 34.8        | 2.216          | 2.984    | 13.9    | 21.7 | 11 17         | 1 17.38                        | +21 40.5        | 1.694          | 2.591    | 11.4    | 20.2 |
| 11 27         | 1 15.38                       | -13 51.1        | 2.330          | 2.999    | 15.8    | 21.9 | 11 27         | 1 13.54                        | +21 9.9         | 1.772          | 2.595    | 14.6    | 20.4 |
| <b>433486</b> | 2013 <i>WZ</i> <sub>10</sub>  |                 | 10 20.0 352°72 | 3°7/17.3 | 18      |      | <b>183306</b> | 2002 <i>UM</i> <sub>48</sub>   |                 | 10 20.0 320°51 | 5°7/15.2 | 18      |      |
| 9 18          | 2 0.89                        | + 5 59.1        | 1.250          | 2.150    | 15.7    | 20.5 | 9 18          | 1 59.44                        | - 0 32.7        | 1.524          | 2.421    | 13.5    | 19.8 |
| 9 28          | 1 56.48                       | + 4 44.5        | 1.195          | 2.147    | 11.2    | 20.2 | 9 28          | 1 55.25                        | - 1 49.2        | 1.454          | 2.402    | 10.0    | 19.6 |
| 10 8          | 1 49.60                       | + 3 21.0        | 1.161          | 2.144    | 6.4     | 20.0 | 10 8          | 1 48.90                        | - 3 7.7         | 1.407          | 2.382    | 6.7     | 19.3 |
| 10 18         | 1 41.22                       | + 1 57.6        | 1.151          | 2.143    | 3.7     | 19.8 | 10 18         | 1 41.15                        | - 4 19.5        | 1.385          | 2.364    | 5.9     | 19.2 |
| 10 28         | 1 32.69                       | + 0 45.1        | 1.167          | 2.141    | 7.1     | 20.0 | 10 28         | 1 33.10                        | - 5 15.4        | 1.389          | 2.345    | 8.5     | 19.4 |
| 11 7          | 1 25.37                       | - 0 7.7         | 1.207          | 2.141    | 11.9    | 20.3 | 11 7          | 1 25.92                        | - 5 48.7        | 1.417          | 2.328    | 12.4    | 19.5 |
| 11 17         | 1 20.30                       | - 0 35.7        | 1.269          | 2.141    | 16.3    | 20.5 | 11 17         | 1 20.59                        | - 5 56.0        | 1.468          | 2.311    | 16.1    | 19.7 |
| 11 27         | 1 18.12                       | - 0 37.6        | 1.348          | 2.141    | 19.9    | 20.8 | 11 27         | 1 17.80                        | - 5 37.3        | 1.536          | 2.295    | 19.3    | 19.9 |
| <b>487354</b> | 2014 <i>QE</i> <sub>218</sub> |                 | 10 20.0 156°36 | 4°4/24.9 | 17      |      | <b>209328</b> | 2004 <i>BB</i> <sub>93</sub>   |                 | 10 20.0 260°98 | 3°1/16.8 | 18      |      |
| 9 18          | 2 2.76                        | +26 39.7        | 2.489          | 3.285    | 12.3    | 21.7 | 9 18          | 1 59.83                        | + 5 38.8        | 1.931          | 2.813    | 11.8    | 20.3 |
| 9 28          | 1 56.98                       | +26 47.6        | 2.411          | 3.288    | 9.9     | 21.5 | 9 28          | 1 55.08                        | + 4 14.8        | 1.860          | 2.804    | 8.4     | 20.1 |
| 10 8          | 1 49.59                       | +26 39.2        | 2.356          | 3.292    | 7.2     | 21.4 | 10 8          | 1 48.61                        | + 2 43.5        | 1.814          | 2.795    | 4.9     | 19.8 |
| 10 18         | 1 41.22                       | +26 14.2        | 2.328          | 3.295    | 5.0     | 21.2 | 10 18         | 1 41.08                        | + 1 11.8        | 1.796          | 2.785    | 3.1     | 19.7 |
| 10 28         | 1 32.70                       | +25 34.8        | 2.329          | 3.298    | 4.5     | 21.2 | 10 28         | 1 33.39                        | - 0 12.5        | 1.807          | 2.775    | 5.7     | 19.9 |
| 11 7          | 1 24.89                       | +24 45.4        | 2.358          | 3.300    | 6.3     | 21.3 | 11 7          | 1 26.46                        | - 1 22.2        | 1.845          | 2.765    | 9.4     | 20.1 |
| 11 17         | 1 18.50                       | +23 51.5        | 2.415          | 3.303    | 8.8     | 21.5 | 11 17         | 1 21.06                        | - 2 12.6        | 1.909          | 2.755    | 12.8    | 20.3 |
| 11 27         | 1 14.06                       | +22 58.8        | 2.497          | 3.305    | 11.3    | 21.7 | 11 27         | 1 17.73                        | - 2 41.5        | 1.993          | 2.745    | 15.7    | 20.4 |
| <b>505196</b> | 2012 <i>TU</i> <sub>145</sub> |                 | 10 20.0 108°99 | 6°6/14.0 | 17      |      | <b>472847</b> | 2015 <i>FG</i> <sub>285</sub>  |                 | 10 20.0 197°79 | 1°7/21.4 | 18      |      |
| 9 18          | 2 2.45                        | + 7 9.8         | 1.032          | 1.937    | 17.8    | 20.3 | 9 18          | 2 5.84                         | +16 57.3        | 1.659          | 2.513    | 14.9    | 21.7 |
| 9 28          | 1 57.80                       | + 3 32.1        | 0.987          | 1.942    | 12.5    | 20.1 | 9 28          | 1 59.72                        | +16 35.0        | 1.586          | 2.511    | 11.1    | 21.5 |
| 10 8          | 1 50.37                       | - 0 22.6        | 0.966          | 1.947    | 7.7     | 19.8 | 10 8          | 1 51.35                        | +15 56.2        | 1.536          | 2.508    | 6.7     | 21.2 |
| 10 18         | 1 41.35                       | - 4 11.3        | 0.971          | 1.953    | 7.1     | 19.8 | 10 18         | 1 41.56                        | +15 3.6         | 1.513          | 2.506    | 2.4     | 21.0 |
| 10 28         | 1 32.35                       | - 7 29.9        | 1.003          | 1.958    | 11.3    | 20.1 | 10 28         | 1 31.57                        | +14 2.6         | 1.517          | 2.503    | 3.7     | 21.0 |
| 11 7          | 1 24.92                       | -10 1.9         | 1.059          | 1.963    | 16.2    | 20.4 | 11 7          | 1 22.59                        | +13 1.0         | 1.549          | 2.499    | 8.2     | 21.3 |
| 11 17         | 1 20.11                       | -11 41.7        | 1.134          | 1.967    | 20.5    | 20.7 | 11 17         | 1 15.62                        | +12 6.1         | 1.607          | 2.495    | 12.5    | 21.6 |
| 11 27         | 1 18.49                       | -12 32.1        | 1.225          | 1.972    | 24.0    | 20.9 | 11 27         | 1 11.32                        | +11 24.1        | 1.686          | 2.490    | 16.1    | 21.8 |
| <b>366057</b> | 2012 <i>CD</i> <sub>19</sub>  |                 | 10 20.0 254°67 | 6°1/13.9 | 18      |      | <b>513363</b> | 2008 <i>DT</i> <sub>5</sub> </ |                 |                |          |         |      |

EPHEMERIDES

10 20.0

10 20.0

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$         | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$           | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------------|-------------|---------|------|---------------|-------------------------------|-----------------|----------------|---------------|---------|------|
| <b>19685</b>  | 1999 <i>RB</i> <sub>197</sub> |                 | 10 20.0 219°03 | 5°2/25.4 18 |         |      | <b>202756</b> | 2007 <i>QL</i> <sub>11</sub>  |                 | 10 20.0 293°47 | 1°8/16.6 18   |         |      |
| 9 18          | 2 3.73                        | +28 20.2        | 2.388          | 3.175       | 13.0    | 18.0 | 9 18          | 1 52.88                       | + 2 24.4        | 4.320          | 5.193         | 6.0     | 20.6 |
| 9 28          | 1 57.85                       | +28 39.2        | 2.302          | 3.171       | 10.6    | 17.8 | 9 28          | 1 49.36                       | + 1 42.2        | 4.252          | 5.191         | 4.3     | 20.5 |
| 10 8          | 1 50.18                       | +28 40.6        | 2.240          | 3.167       | 8.0     | 17.6 | 10 8          | 1 45.13                       | + 0 59.1        | 4.212          | 5.189         | 2.6     | 20.4 |
| 10 18         | 1 41.36                       | +28 23.4        | 2.203          | 3.162       | 5.9     | 17.5 | 10 18         | 1 40.51                       | + 0 17.5        | 4.202          | 5.187         | 1.8     | 20.3 |
| 10 28         | 1 32.31                       | +27 49.1        | 2.195          | 3.158       | 5.3     | 17.4 | 10 28         | 1 35.84                       | - 0 20.1        | 4.222          | 5.185         | 3.0     | 20.4 |
| 11 7          | 1 23.95                       | +27 1.8         | 2.215          | 3.153       | 6.9     | 17.5 | 11 7          | 1 31.48                       | - 0 51.5        | 4.273          | 5.183         | 4.8     | 20.5 |
| 11 17         | 1 17.09                       | +26 7.4         | 2.262          | 3.148       | 9.4     | 17.7 | 11 17         | 1 27.75                       | - 1 15.1        | 4.350          | 5.181         | 6.5     | 20.7 |
| 11 27         | 1 12.34                       | +25 12.5        | 2.333          | 3.143       | 12.0    | 17.8 | 11 27         | 1 24.91                       | - 1 29.8        | 4.452          | 5.180         | 8.0     | 20.8 |
| <b>261343</b> | 2005 <i>UP</i> <sub>265</sub> |                 | 10 20.0 54°05  | 1°8/18.5 18 |         |      | <b>259557</b> | 2003 <i>UF</i> <sub>153</sub> |                 | 10 20.0 355°10 | 3°2/18.6 18   |         |      |
| 9 18          | 2 1.49                        | + 7 1.4         | 1.948          | 2.825       | 12.0    | 20.7 | 9 18          | 2 10.31                       | + 2 43.2        | 1.200          | 2.091         | 16.9    | 19.7 |
| 9 28          | 1 56.16                       | + 6 26.8        | 1.890          | 2.831       | 8.5     | 20.5 | 9 28          | 2 3.48                        | + 2 53.3        | 1.142          | 2.089         | 12.2    | 19.4 |
| 10 8          | 1 49.15                       | + 5 46.8        | 1.857          | 2.838       | 4.7     | 20.3 | 10 8          | 1 53.68                       | + 3 3.3         | 1.105          | 2.087         | 7.1     | 19.1 |
| 10 18         | 1 41.17                       | + 5 5.8         | 1.851          | 2.845       | 1.8     | 20.1 | 10 18         | 1 42.01                       | + 3 17.4        | 1.093          | 2.086         | 3.2     | 18.9 |
| 10 28         | 1 33.14                       | + 4 28.8        | 1.873          | 2.851       | 4.3     | 20.3 | 10 28         | 1 30.11                       | + 3 40.2        | 1.106          | 2.085         | 6.4     | 19.1 |
| 11 7          | 1 25.97                       | + 4 0.8         | 1.923          | 2.858       | 8.0     | 20.6 | 11 7          | 1 19.65                       | + 4 14.6        | 1.144          | 2.085         | 11.6    | 19.4 |
| 11 17         | 1 20.38                       | + 3 45.0        | 1.999          | 2.865       | 11.4    | 20.8 | 11 17         | 1 11.89                       | + 5 2.1         | 1.205          | 2.085         | 16.3    | 19.7 |
| 11 27         | 1 16.86                       | + 3 43.3        | 2.097          | 2.872       | 14.3    | 21.0 | 11 27         | 1 7.56                        | + 6 2.6         | 1.285          | 2.086         | 20.3    | 19.9 |
| <b>244819</b> | 2003 <i>TA</i> <sub>3</sub>   |                 | 10 20.0 355°54 | 9°7/11.2 18 |         |      | <b>152349</b> | 2005 <i>UK</i> <sub>84</sub>  |                 | 10 20.0 313°70 | 0°7/19.4 17   |         |      |
| 9 18          | 1 57.80                       | - 7 52.9        | 1.324          | 2.228       | 14.7    | 19.2 | 9 18          | 2 0.59                        | +10 20.3        | 1.838          | 2.712         | 12.7    | 21.2 |
| 9 28          | 1 54.12                       | - 9 59.8        | 1.283          | 2.224       | 11.7    | 19.0 | 9 28          | 1 55.81                       | + 9 50.2        | 1.759          | 2.699         | 9.2     | 21.0 |
| 10 8          | 1 48.23                       | -11 58.5        | 1.263          | 2.221       | 9.8     | 18.9 | 10 8          | 1 49.13                       | + 9 10.6        | 1.704          | 2.685         | 5.1     | 20.7 |
| 10 18         | 1 41.03                       | -13 36.1        | 1.268          | 2.218       | 10.2    | 18.9 | 10 18         | 1 41.23                       | + 8 25.4        | 1.676          | 2.672         | 1.0     | 20.4 |
| 10 28         | 1 33.74                       | -14 42.1        | 1.296          | 2.217       | 12.6    | 19.0 | 10 28         | 1 33.07                       | + 7 40.1        | 1.676          | 2.659         | 3.9     | 20.6 |
| 11 7          | 1 27.57                       | -15 11.4        | 1.346          | 2.217       | 15.7    | 19.2 | 11 7          | 1 25.67                       | + 7 0.5         | 1.703          | 2.646         | 8.2     | 20.8 |
| 11 17         | 1 23.42                       | -15 4.2         | 1.414          | 2.217       | 18.7    | 19.4 | 11 17         | 1 19.90                       | + 6 31.6        | 1.756          | 2.634         | 12.1    | 21.1 |
| 11 27         | 1 21.88                       | -14 24.5        | 1.498          | 2.219       | 21.3    | 19.6 | 11 27         | 1 16.37                       | + 6 17.2        | 1.830          | 2.622         | 15.4    | 21.3 |
| <b>139258</b> | 2001 <i>HH</i> <sub>47</sub>  |                 | 10 20.0 19°95  | 5°1/17.1 18 |         |      | <b>30452</b>  | 2000 <i>NR</i> <sub>24</sub>  |                 | 10 20.0 318°20 | 7°0/13.2 18   |         |      |
| 9 18          | 2 3.48                        | + 1 38.3        | 1.091          | 1.997       | 16.9    | 18.4 | 9 18          | 1 59.96                       | - 6 22.9        | 1.814          | 2.703         | 12.2    | 18.4 |
| 9 28          | 1 58.46                       | + 0 54.2        | 1.049          | 2.002       | 12.2    | 18.1 | 9 28          | 1 55.24                       | - 7 47.9        | 1.759          | 2.696         | 9.4     | 18.2 |
| 10 8          | 1 50.74                       | + 0 9.2         | 1.027          | 2.009       | 7.4     | 17.9 | 10 8          | 1 48.72                       | - 9 8.0         | 1.729          | 2.689         | 7.3     | 18.1 |
| 10 18         | 1 41.46                       | + 0 28.2        | 1.029          | 2.017       | 5.1     | 17.8 | 10 18         | 1 41.15                       | -10 15.0        | 1.724          | 2.682         | 7.3     | 18.1 |
| 10 28         | 1 32.18                       | - 0 49.6        | 1.054          | 2.026       | 8.1     | 18.0 | 10 28         | 1 33.45                       | -11 1.8         | 1.746          | 2.676         | 9.3     | 18.2 |
| 11 7          | 1 24.41                       | - 0 49.7        | 1.102          | 2.035       | 12.8    | 18.3 | 11 7          | 1 26.60                       | -11 24.1        | 1.793          | 2.670         | 12.1    | 18.3 |
| 11 17         | 1 19.20                       | - 0 27.1        | 1.171          | 2.046       | 17.1    | 18.6 | 11 17         | 1 21.36                       | -11 20.8        | 1.861          | 2.664         | 14.9    | 18.5 |
| 11 27         | 1 17.14                       | + 0 17.2        | 1.257          | 2.057       | 20.7    | 18.9 | 11 27         | 1 18.29                       | -10 53.4        | 1.948          | 2.658         | 17.3    | 18.7 |
| <b>457977</b> | 2009 <i>VB</i> <sub>107</sub> |                 | 10 20.0 321°37 | 4°6/24.4 18 |         |      | <b>392945</b> | 2012 <i>WN</i> <sub>9</sub>   |                 | 10 20.0 328°24 | 4°3/23.9 18   |         |      |
| 9 18          | 1 59.53                       | +25 21.3        | 1.943          | 2.765       | 14.3    | 20.6 | 9 18          | 2 1.76                        | +24 11.0        | 1.641          | 2.475         | 16.0    | 20.0 |
| 9 28          | 1 55.16                       | +25 18.0        | 1.853          | 2.748       | 11.4    | 20.3 | 9 28          | 1 56.93                       | +23 56.1        | 1.566          | 2.471         | 12.5    | 19.8 |
| 10 8          | 1 48.81                       | +24 54.4        | 1.784          | 2.732       | 8.2     | 20.1 | 10 8          | 1 49.85                       | +23 18.1        | 1.512          | 2.467         | 8.7     | 19.6 |
| 10 18         | 1 41.16                       | +24 10.5        | 1.740          | 2.716       | 5.4     | 19.9 | 10 18         | 1 41.35                       | +22 17.9        | 1.482          | 2.463         | 5.2     | 19.3 |
| 10 28         | 1 33.18                       | +23 9.4         | 1.724          | 2.700       | 4.9     | 19.9 | 10 28         | 1 32.63                       | +21 0.5         | 1.479          | 2.460         | 4.8     | 19.3 |
| 11 7          | 1 25.95                       | +21 57.1        | 1.734          | 2.685       | 7.4     | 20.0 | 11 7          | 1 24.90                       | +19 34.3        | 1.503          | 2.456         | 8.0     | 19.5 |
| 11 17         | 1 20.36                       | +20 41.6        | 1.771          | 2.670       | 10.8    | 20.2 | 11 17         | 1 19.16                       | +18 8.8         | 1.552          | 2.453         | 12.0    | 19.7 |
| 11 27         | 1 17.09                       | +19 30.9        | 1.831          | 2.656       | 14.1    | 20.3 | 11 27         | 1 16.06                       | +16 53.1        | 1.624          | 2.450         | 15.5    | 19.9 |
| <b>449824</b> | 2014 <i>PZ</i> <sub>18</sub>  |                 | 10 20.0 315°21 | 8°7/10.2 18 |         |      | <b>511616</b> | 2015 <i>BT</i> <sub>25</sub>  |                 | 10 20.0 275°72 | 1°4/21.0 17   |         |      |
| 9 18          | 1 58.76                       | -12 49.1        | 1.977          | 2.855       | 11.8    | 20.4 | 9 18          | 2 4.74                        | +15 45.3        | 1.393          | 2.262         | 16.3    | 21.8 |
| 9 28          | 1 54.30                       | -14 27.9        | 1.925          | 2.844       | 9.8     | 20.2 | 9 28          | 1 59.37                       | +15 23.6        | 1.318          | 2.252         | 12.2    | 21.1 |
| 10 8          | 1 48.17                       | -15 56.9        | 1.898          | 2.833       | 8.7     | 20.1 | 10 8          | 1 51.37                       | +14 44.1        | 1.265          | 2.241         | 7.3     | 21.2 |
| 10 18         | 1 41.03                       | -17 7.8         | 1.897          | 2.822       | 9.2     | 20.2 | 10 18         | 1 41.63                       | +13 49.6        | 1.237          | 2.231         | 2.2     | 20.9 |
| 10 28         | 1 33.76                       | -17 54.1        | 1.920          | 2.811       | 10.9    | 20.2 | 10 28         | 1 31.53                       | +12 46.6        | 1.234          | 2.221         | 4.2     | 21.0 |
| 11 7          | 1 27.26                       | -18 12.2        | 1.967          | 2.801       | 13.1    | 20.4 | 11 7          | 1 22.51                       | +11 44.2        | 1.258          | 2.210         | 9.4     | 21.2 |
| 11 17         | 1 22.25                       | -18 2.2         | 2.035          | 2.790       | 15.4    | 20.5 | 11 17         | 1 15.76                       | +10 51.0        | 1.306          | 2.200         | 14.3    | 21.5 |
| 11 27         | 1 19.26                       | -17 26.5        | 2.120          | 2.781       | 17.4    | 20.7 | 11 27         | 1 12.05                       | +10 13.7        | 1.374          | 2.190         | 18.4    | 21.7 |
| <b>12277</b>  | Tajimasatonokai               |                 | 10 20.0 313°05 | 8°4/14.1 18 |         |      | <b>403201</b> | 2008 <i>SY</i> <sub>68</sub>  |                 | 10 20.0 34°79  | 1°4/21.3 14 C |         |      |
| 9 18          | 2 4.96                        | - 9 46.1        | 1.596          | 2.479       | 13.9    | 17.1 | 9 18          | 2 1.38                        | +15 39.7        | 1.993          | 2.849         | 12.7    | 21.3 |
| 9 28          | 1 59.09                       | -10 37.4        | 1.536          | 2.466       | 11.0    | 16.9 | 9 28          | 1 56.13                       | +15 32.7        | 1.931          | 2.857         | 9.4     | 21.1 |
| 10 8          | 1 50.99                       | -11 18.7        | 1.498          | 2.453       | 8.8     | 16.7 | 10 8          | 1 49.18                       | +15 14.1        | 1.894          | 2.866         | 5.6     | 20.9 |
| 10 18         | 1 41.53                       | -11 42.2        | 1.485          | 2.440       | 8.6     | 16.7 | 10 18         | 1 41.22                       | +14 46.0        | 1.882          | 2.876         | 2.0     | 20.7 |
| 10 28         | 1 31.88                       | -11 41.2        | 1.498          | 2.428       | 10.5    | 16.8 | 10 28         | 1 33.19                       | +14 12.3        | 1.900          | 2.885         | 3.1     | 20.8 |
| 11 7          | 1 23.25                       | -11 13.2        | 1.535          | 2.416       | 13.5    | 16.9 | 11 7          | 1 26.00                       | +13 38.0        | 1.945          | 2.895         | 6.8     | 21.1 |
| 11 17         | 1 16.59                       | -10 19.2        | 1.593          | 2.404       | 16.6    | 17.1 | 11 17         | 1 20.40                       | +13 8.1         | 2.017          | 2.906         | 10.3    | 21.3 |
| 11 27         | 1 12.56                       | - 9 2.4         | 1.670          | 2.393       | 19.3    | 17.3 | 11 27         | 1 16.90                       | +12 46.6        | 2.112          | 2.916         | 13.2    | 21.5 |
| <b>450746</b> | 2007 <i>HZ</i> <sub>55</sub>  |                 | 10 20.0 77°65  | 2°1/17.7 18 |         |      | <b>356954</b> | 2012 <i>WF</i> <sub>23</sub>  |                 | 10 20.0 12°34  | 2°4/21.7 18   |         |      |
| 9 18          | 1 58.65                       | + 7 9.2         | 2.212          | 3.089       | 10.8    | 21.4 | 9 18          | 2 1.99                        | +17 4.6         | 1.268          | 2.143         | 17.3    | 19.7 |
| 9 28          | 1 53.97                       | + 6 2.2         | 2.153          | 3.095       | 7.6     | 21.2 | 9 28          | 1 57.38                       | +17 3.8         | 1.212          | 2.146         | 12.9    | 19.4 |
| 10 8          | 1 47.88                       | + 4 49.3        | 2.120          | 3.102       | 4.2     | 21.0 | 10 8          | 1 50.19                       | +16 44.4        | 1.175          | 2.150         | 8.0     | 19.2 |
| 10 18         | 1 40.98                       | + 3 35.7        | 2.116          | 3.108       | 2.1     | 20.8 | 10 18         | 1 41.42                       | +16 8.8         | 1.162          | 2.154         | 3.2     | 18.9 |
| 10 28         | 1 34.05                       | + 2 27.6        | 2.141          | 3.114       | 4.4     | 21.0 | 10 28         | 1 32.47                       | +15 22.7        | 1.174          | 2.160         | 4.3     | 19.0 |
| 11 7          | 1 27.83                       | + 1 30.1        | 2.194          | 3.121       | 7.7     | 21.2 | 11 7          | 1 24.80                       | +14 34.8        | 1.211          | 2.167         | 9.2     | 19.3 |
| 11 17         | 1 22.96                       | + 0 47.1        | 2.273          | 3.127       | 10.7    | 21.4 | 11 17         | 1 19.48                       | +13 53.0        | 1.270          | 2.175         | 13.8    | 19.6 |
| 11 27         | 1 19.87                       | + 0 20.8        | 2.375          | 3.134       | 13.3    | 21.6 | 11 27         | 1 17.19                       | +13 24.1        | 1.350          | 2.184         | 17.7    | 19.9 |
| <b>514307</b> | 2015 <i>XM</i> <sub>126</sub> |                 | 10 20.0 69°11  | 8°6/10.1 18 |         |      | <b>494478</b> | 2016 <i>WL</i> <sub>22</sub>  |                 | 10 20.0        |               |         |      |

EPHEMERIDES

10 20.0

10 20.1

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$    | $\beta$  | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$    | $\beta$  | $V$  |
|---------------|-------------------------------|-----------------|----------|--------|----------|------|---------------|-------------------------------|-----------------|----------|--------|----------|------|
| <b>45606</b>  | 2000 <i>DE</i> <sub>32</sub>  |                 | 10 20.0  | 75°00  | 2°3/17.7 | 18   | <b>39675</b>  | 1996 <i>BL</i> <sub>15</sub>  |                 | 10 20.1  | 188°70 | 3°9/16.1 | 18   |
| 9 18          | 1 59.69                       | + 5 19.6        | 2.247    | 3.124  | 10.6     | 18.8 | 9 18          | 2 0.78                        | - 0 14.9        | 2.264    | 3.143  | 10.5     | 19.5 |
| 9 28          | 1 54.66                       | + 4 30.3        | 2.194    | 3.135  | 7.5      | 18.6 | 9 28          | 1 55.51                       | - 1 5.5         | 2.203    | 3.143  | 7.6      | 19.3 |
| 10 8          | 1 48.24                       | + 3 37.4        | 2.167    | 3.147  | 4.2      | 18.4 | 10 8          | 1 48.77                       | - 1 55.9        | 2.169    | 3.143  | 4.9      | 19.2 |
| 10 18         | 1 41.05                       | + 2 45.5        | 2.168    | 3.159  | 2.3      | 18.3 | 10 18         | 1 41.19                       | - 2 41.1        | 2.162    | 3.142  | 3.9      | 19.1 |
| 10 28         | 1 33.86                       | + 1 59.5        | 2.198    | 3.170  | 4.4      | 18.5 | 10 28         | 1 33.53                       | - 3 16.1        | 2.184    | 3.142  | 5.8      | 19.2 |
| 11 7          | 1 27.41                       | + 1 23.8        | 2.256    | 3.182  | 7.6      | 18.7 | 11 7          | 1 26.58                       | - 3 37.3        | 2.234    | 3.141  | 8.7      | 19.4 |
| 11 17         | 1 22.30                       | + 1 1.2         | 2.340    | 3.193  | 10.5     | 18.9 | 11 17         | 1 20.97                       | - 3 42.6        | 2.309    | 3.140  | 11.4     | 19.6 |
| 11 27         | 1 18.98                       | + 0 53.2        | 2.447    | 3.205  | 13.0     | 19.1 | 11 27         | 1 17.17                       | - 3 31.7        | 2.406    | 3.139  | 13.8     | 19.8 |
| <b>264130</b> | 2009 <i>TK</i> <sub>46</sub>  |                 | 10 20.0  | 263°37 | 5°3/10.2 | 18   | <b>487216</b> | 2014 <i>OF</i> <sub>386</sub> |                 | 10 20.1  | 323°28 | 4°6/24.4 | 17   |
| 9 18          | 1 55.90                       | -18 55.7        | 4.373    | 5.212  | 6.6      | 20.0 | 9 18          | 2 2.05                        | +25 20.6        | 2.064    | 2.879  | 13.9     | 21.3 |
| 9 28          | 1 51.47                       | -19 29.8        | 4.328    | 5.210  | 5.7      | 19.9 | 9 28          | 1 56.81                       | +25 26.2        | 1.985    | 2.876  | 11.0     | 21.1 |
| 10 8          | 1 46.30                       | -19 56.0        | 4.309    | 5.207  | 5.3      | 19.9 | 10 8          | 1 49.68                       | +25 13.3        | 1.928    | 2.873  | 7.9      | 20.9 |
| 10 18         | 1 40.72                       | -20 11.7        | 4.317    | 5.205  | 5.5      | 19.9 | 10 18         | 1 41.37                       | +24 41.8        | 1.896    | 2.870  | 5.2      | 20.7 |
| 10 28         | 1 35.12                       | -20 14.9        | 4.352    | 5.202  | 6.2      | 20.0 | 10 28         | 1 32.83                       | +23 54.4        | 1.893    | 2.867  | 4.8      | 20.7 |
| 11 7          | 1 29.90                       | -20 4.9         | 4.413    | 5.199  | 7.2      | 20.0 | 11 7          | 1 25.09                       | +22 56.6        | 1.916    | 2.864  | 7.1      | 20.8 |
| 11 17         | 1 25.38                       | -19 41.6        | 4.497    | 5.197  | 8.3      | 20.1 | 11 17         | 1 18.99                       | +21 55.3        | 1.967    | 2.862  | 10.2     | 21.0 |
| 11 27         | 1 21.84                       | -19 6.0         | 4.602    | 5.194  | 9.3      | 20.2 | 11 27         | 1 15.13                       | +20 57.3        | 2.041    | 2.859  | 13.1     | 21.2 |
| <b>324254</b> | 2006 <i>BE</i> <sub>189</sub> |                 | 10 20.1  | 254°86 | 0°3/20.3 | 17   | <b>59865</b>  | 1999 <i>RO</i> <sub>103</sub> |                 | 10 20.1  | 77°38  | 0°6/19.4 | 18   |
| 9 18          | 2 1.42                        | +12 28.8        | 2.393    | 3.250  | 10.8     | 21.3 | 9 18          | 1 59.70                       | +12 8.4         | 2.046    | 2.913  | 11.9     | 19.0 |
| 9 28          | 1 56.03                       | +12 13.8        | 2.312    | 3.241  | 7.9      | 21.1 | 9 28          | 1 54.84                       | +11 8.3         | 1.986    | 2.922  | 8.5      | 18.8 |
| 10 8          | 1 49.11                       | +11 50.6        | 2.256    | 3.232  | 4.5      | 20.9 | 10 8          | 1 48.43                       | +9 57.9         | 1.951    | 2.931  | 4.7      | 18.6 |
| 10 18         | 1 41.23                       | +11 21.3        | 2.228    | 3.223  | 0.9      | 20.6 | 10 18         | 1 41.13                       | +8 42.1         | 1.945    | 2.940  | 0.8      | 18.3 |
| 10 28         | 1 33.18                       | +10 49.6        | 2.229    | 3.214  | 2.9      | 20.8 | 10 28         | 1 33.81                       | +7 27.1         | 1.967    | 2.950  | 3.5      | 18.6 |
| 11 7          | 1 25.74                       | +10 19.5        | 2.260    | 3.205  | 6.4      | 21.0 | 11 7          | 1 27.31                       | +6 19.5         | 2.018    | 2.959  | 7.3      | 18.8 |
| 11 17         | 1 19.59                       | +9 54.9         | 2.319    | 3.195  | 9.6      | 21.2 | 11 17         | 1 22.28                       | +5 24.2         | 2.096    | 2.968  | 10.7     | 19.0 |
| 11 27         | 1 15.27                       | +9 39.1         | 2.401    | 3.186  | 12.4     | 21.4 | 11 27         | 1 19.21                       | +4 44.6         | 2.196    | 2.977  | 13.5     | 19.3 |
| <b>207319</b> | Eugenemar                     |                 | 10 20.1  | 210°47 | 0°3/19.8 | 18   | <b>190011</b> | 2004 <i>NR</i> <sub>1</sub>   |                 | 10 20.1  | 119°75 | 9°0/12.4 | 18   |
| 9 18          | 2 6.32                        | +9 44.5         | 2.085    | 2.945  | 12.0     | 20.4 | 9 18          | 2 4.77                        | -11 42.4        | 1.696    | 2.573  | 13.5     | 19.8 |
| 9 28          | 1 59.69                       | +9 43.0         | 2.009    | 2.941  | 8.7      | 20.2 | 9 28          | 1 58.63                       | -13 10.2        | 1.660    | 2.582  | 10.9     | 19.6 |
| 10 8          | 1 51.22                       | +9 34.9         | 1.959    | 2.937  | 4.9      | 19.9 | 10 8          | 1 50.58                       | -14 25.9        | 1.649    | 2.591  | 9.2      | 19.6 |
| 10 18         | 1 41.61                       | +9 22.5         | 1.937    | 2.933  | 0.8      | 19.6 | 10 18         | 1 41.50                       | -15 20.8        | 1.663    | 2.600  | 9.3      | 19.6 |
| 10 28         | 1 31.80                       | +9 9.3          | 1.945    | 2.928  | 3.4      | 19.8 | 10 28         | 1 32.49                       | -15 48.7        | 1.702    | 2.608  | 11.1     | 19.7 |
| 11 7          | 1 22.77                       | +8 59.0         | 1.982    | 2.923  | 7.4      | 20.1 | 11 7          | 1 24.59                       | -15 47.3        | 1.765    | 2.617  | 13.6     | 19.9 |
| 11 17         | 1 15.33                       | +8 55.2         | 2.046    | 2.918  | 10.9     | 20.3 | 11 17         | 1 18.59                       | -15 18.3        | 1.849    | 2.624  | 16.0     | 20.1 |
| 11 27         | 1 10.09                       | +9 0.6          | 2.133    | 2.912  | 13.9     | 20.5 | 11 27         | 1 14.98                       | -14 25.2        | 1.951    | 2.632  | 18.1     | 20.3 |
| <b>225673</b> | 2001 <i>OV</i> <sub>76</sub>  |                 | 10 20.1  | 23°86  | 4°1/17.8 | 18   | <b>115750</b> | 2003 <i>UU</i> <sub>197</sub> |                 | 10 20.1  | 311°27 | 1°4/18.9 | 18   |
| 9 18          | 2 5.67                        | +2 24.8         | 1.197    | 2.095  | 16.4     | 19.4 | 9 18          | 2 4.65                        | +5 36.6         | 2.297    | 3.164  | 10.8     | 19.1 |
| 9 28          | 1 59.92                       | +2 1.7          | 1.151    | 2.101  | 11.8     | 19.1 | 9 28          | 1 58.30                       | +5 36.8         | 2.227    | 3.163  | 7.7      | 18.9 |
| 10 8          | 1 51.55                       | +1 37.4         | 1.126    | 2.108  | 6.9      | 18.9 | 10 8          | 1 50.37                       | +5 34.4         | 2.183    | 3.162  | 4.3      | 18.7 |
| 10 18         | 1 41.66                       | +1 18.2         | 1.125    | 2.116  | 4.1      | 18.8 | 10 18         | 1 41.48                       | +5 31.7         | 2.167    | 3.161  | 1.5      | 18.5 |
| 10 28         | 1 31.75                       | +1 10.9         | 1.149    | 2.124  | 7.0      | 19.0 | 10 28         | 1 32.46                       | +5 31.8         | 2.181    | 3.160  | 3.7      | 18.6 |
| 11 7          | 1 23.27                       | +1 19.9         | 1.197    | 2.133  | 11.7     | 19.2 | 11 7          | 1 24.16                       | +5 37.4         | 2.225    | 3.159  | 7.2      | 18.9 |
| 11 17         | 1 17.29                       | +1 46.8         | 1.267    | 2.143  | 16.0     | 19.5 | 11 17         | 1 17.28                       | +5 50.6         | 2.296    | 3.159  | 10.3     | 19.1 |
| 11 27         | 1 14.40                       | +2 31.4         | 1.356    | 2.154  | 19.6     | 19.8 | 11 27         | 1 12.34                       | +6 13.0         | 2.390    | 3.158  | 13.0     | 19.2 |
| <b>169690</b> | 2002 <i>JK</i> <sub>149</sub> |                 | 10 20.1  | 125°18 | 2°8/17.2 | 18   | <b>73854</b>  | 1996 <i>VW</i> <sub>23</sub>  |                 | 10 20.1  | 45°83  | 1°9/19.0 | 17   |
| 9 18          | 2 1.27                        | +6 52.1         | 1.879    | 2.758  | 12.3     | 20.6 | 9 18          | 2 7.97                        | +7 11.4         | 1.085    | 1.980  | 17.9     | 18.9 |
| 9 28          | 1 56.03                       | +5 21.2         | 1.824    | 2.767  | 8.7      | 20.4 | 9 28          | 2 1.62                        | +6 58.6         | 1.049    | 1.998  | 12.8     | 18.7 |
| 10 8          | 1 49.10                       | +3 43.1         | 1.795    | 2.776  | 4.9      | 20.2 | 10 8          | 1 52.47                       | +6 38.3         | 1.033    | 2.016  | 7.1      | 18.4 |
| 10 18         | 1 41.22                       | +2 5.2          | 1.794    | 2.784  | 2.8      | 20.1 | 10 18         | 1 41.83                       | +6 16.2         | 1.040    | 2.035  | 2.0      | 18.2 |
| 10 28         | 1 33.35                       | +0 35.7         | 1.822    | 2.792  | 5.4      | 20.3 | 10 28         | 1 31.35                       | +5 59.1         | 1.072    | 2.055  | 5.7      | 18.5 |
| 11 7          | 1 26.37                       | - 0 38.5        | 1.878    | 2.800  | 9.1      | 20.5 | 11 7          | 1 22.59                       | +5 52.9         | 1.128    | 2.075  | 11.0     | 18.8 |
| 11 17         | 1 21.01                       | - 1 32.9        | 1.960    | 2.808  | 12.4     | 20.7 | 11 17         | 1 16.60                       | +6 1.2          | 1.207    | 2.095  | 15.7     | 19.2 |
| 11 27         | 1 17.76                       | - 2 5.7         | 2.062    | 2.815  | 15.2     | 21.0 | 11 27         | 1 13.91                       | +6 25.4         | 1.304    | 2.116  | 19.4     | 19.5 |
| <b>78142</b>  | 2002 <i>NR</i> <sub>18</sub>  |                 | 10 20.1  | 307°48 | 0°7/20.8 | 18   | <b>232180</b> | 2002 <i>ET</i> <sub>65</sub>  |                 | 10 20.1  | 176°90 | 6°2/24.8 | 18   |
| 9 18          | 1 59.29                       | +14 54.3        | 2.141    | 2.999  | 11.8     | 18.8 | 9 18          | 2 8.95                        | +27 6.2         | 1.888    | 2.689  | 15.5     | 20.3 |
| 9 28          | 1 54.67                       | +14 23.4        | 2.060    | 2.989  | 8.7      | 18.5 | 9 28          | 2 2.04                        | +27 50.1        | 1.812    | 2.690  | 12.6     | 20.1 |
| 10 8          | 1 48.41                       | +13 40.5        | 2.003    | 2.978  | 5.1      | 18.3 | 10 8          | 1 52.76                       | +28 14.4        | 1.758    | 2.690  | 9.5      | 19.9 |
| 10 18         | 1 41.13                       | +12 48.5        | 1.973    | 2.968  | 1.3      | 18.0 | 10 18         | 1 41.92                       | +28 16.5        | 1.728    | 2.691  | 6.9      | 19.7 |
| 10 28         | 1 33.66                       | +11 52.2        | 1.973    | 2.958  | 3.0      | 18.1 | 10 28         | 1 30.74                       | +27 57.4        | 1.726    | 2.691  | 6.4      | 19.7 |
| 11 7          | 1 26.86                       | +10 57.3        | 2.001    | 2.949  | 6.8      | 18.4 | 11 7          | 1 20.50                       | +27 21.6        | 1.752    | 2.691  | 8.4      | 19.8 |
| 11 17         | 1 21.47                       | +10 9.1         | 2.055    | 2.939  | 10.3     | 18.6 | 11 17         | 1 12.28                       | +26 36.3        | 1.804    | 2.690  | 11.4     | 20.0 |
| 11 27         | 1 18.03                       | +9 32.0         | 2.133    | 2.930  | 13.4     | 18.8 | 11 27         | 1 6.80                        | +25 49.7        | 1.878    | 2.690  | 14.3     | 20.2 |
| <b>521558</b> | 2015 <i>OU</i> <sub>103</sub> |                 | 10 20.1  | 25°84  | 6°2/16.5 | 18   | <b>493627</b> | 2015 <i>PW</i> <sub>35</sub>  |                 | 10 20.1  | 30°32  | 0°3/20.3 | 18   |
| 9 18          | 2 6.85                        | - 5 29.8        | 1.537    | 2.422  | 14.2     | 20.0 | 9 18          | 2 4.19                        | +12 11.7        | 1.745    | 2.612  | 13.7     | 21.3 |
| 9 28          | 2 0.25                        | - 5 45.7        | 1.492    | 2.430  | 10.6     | 19.8 | 9 28          | 1 58.39                       | +12 3.0         | 1.680    | 2.614  | 9.9      | 21.1 |
| 10 8          | 1 51.54                       | - 5 54.0        | 1.470    | 2.439  | 7.4      | 19.6 | 10 8          | 1 50.57                       | +11 44.2        | 1.638    | 2.616  | 5.7      | 20.8 |
| 10 18         | 1 41.65                       | - 5 48.9        | 1.474    | 2.449  | 6.3      | 19.6 | 10 18         | 1 41.52                       | +11 18.0        | 1.623    | 2.618  | 1.1      | 20.5 |
| 10 28         | 1 31.82                       | - 5 26.4        | 1.505    | 2.459  | 8.3      | 19.7 | 10 28         | 1 32.32                       | +10 48.9        | 1.635    | 2.620  | 3.6      | 20.7 |
| 11 7          | 1 23.23                       | - 4 45.2        | 1.561    | 2.470  | 11.5     | 19.9 | 11 7          | 1 24.07                       | +10 22.4        | 1.675    | 2.623  | 8.0      | 21.0 |
| 11 17         | 1 16.74                       | - 3 46.3        | 1.640    | 2.482  | 14.8     | 20.2 | 11 17         | 1 17.66                       | +10 3.2         | 1.741    | 2.625  | 11.9     | 21.2 |
| 11 27         | 1 12.87                       | - 2 32.3        | 1.740    | 2.494  | 17.6     | 20.4 | 11 27         | 1 13.67                       | +9 55.2         | 1.829    | 2.628  | 15.2     | 21.4 |
| <b>41897</b>  | 2000 <i>WP</i> <sub>123</sub> |                 | 10 20.1  | 179°69 | 0°3/19.8 | 18   | <b>316759</b> |                               |                 |          |        |          |      |

EPHEMERIDES

10 20.1

10 20.1

| 2020          | $\alpha_{2000}$        | $\delta_{2000}$              | $\Delta$ | $r$   | $\beta$ | $V$  | 2020          | $\alpha_{2000}$        | $\delta_{2000}$            | $\Delta$ | $r$   | $\beta$ | $V$  |
|---------------|------------------------|------------------------------|----------|-------|---------|------|---------------|------------------------|----------------------------|----------|-------|---------|------|
| <b>446049</b> | 2013 CA <sub>115</sub> | 10 20.1 263°85 0°7/20.7 18   |          |       |         |      | <b>510177</b> | 2011 BX <sub>31</sub>  | 10 20.1 288°26 4°8/23.1 18 |          |       |         |      |
| 9 18          | 2 3.07                 | +13 54.5                     | 1.939    | 2.799 | 12.8    | 21.6 | 9 18          | 2 6.63                 | +21 39.7                   | 1.442    | 2.287 | 17.2    | 21.5 |
| 9 28          | 1 57.51                | +13 40.6                     | 1.864    | 2.794 | 9.4     | 21.4 | 9 28          | 2 0.95                 | +22 4.8                    | 1.361    | 2.273 | 13.5    | 21.2 |
| 10 8          | 1 50.06                | +13 15.5                     | 1.813    | 2.789 | 5.5     | 21.2 | 10 8          | 1 52.44                | +22 9.7                    | 1.300    | 2.259 | 9.3     | 21.0 |
| 10 18         | 1 41.45                | +12 41.8                     | 1.789    | 2.784 | 1.4     | 20.9 | 10 18         | 1 41.95                | +21 53.0                   | 1.262    | 2.245 | 5.5     | 20.7 |
| 10 28         | 1 32.63                | +12 3.6                      | 1.794    | 2.779 | 3.3     | 21.0 | 10 28         | 1 30.90                | +21 17.1                   | 1.251    | 2.231 | 5.5     | 20.7 |
| 11 7          | 1 24.62                | +11 26.5                     | 1.827    | 2.775 | 7.4     | 21.3 | 11 7          | 1 20.85                | +20 28.8                   | 1.265    | 2.217 | 9.4     | 20.9 |
| 11 17         | 1 18.24                | +10 55.6                     | 1.886    | 2.770 | 11.1    | 21.5 | 11 17         | 1 13.13                | +19 37.1                   | 1.303    | 2.203 | 13.8    | 21.1 |
| 11 27         | 1 14.11                | +10 35.0                     | 1.967    | 2.765 | 14.3    | 21.7 | 11 27         | 1 8.65                 | +18 51.4                   | 1.362    | 2.190 | 17.9    | 21.3 |
| <b>274590</b> | 2008 TN <sub>18</sub>  | 10 20.1 68°18 0°3/19.8 18    |          |       |         |      | <b>403455</b> | 2009 ST <sub>318</sub> | 10 20.1 325°78 1°7/18.5 17 |          |       |         |      |
| 9 18          | 2 7.34                 | +10 35.4                     | 1.511    | 2.384 | 15.1    | 20.7 | 9 18          | 1 58.98                | + 8 16.1                   | 1.935    | 2.815 | 12.0    | 20.9 |
| 9 28          | 2 0.63                 | +10 23.8                     | 1.467    | 2.405 | 10.8    | 20.5 | 9 28          | 1 54.55                | + 7 27.7                   | 1.863    | 2.805 | 8.5     | 20.7 |
| 10 8          | 1 51.75                | +10 2.6                      | 1.446    | 2.426 | 6.0     | 20.3 | 10 8          | 1 48.41                | + 6 31.3                   | 1.814    | 2.796 | 4.7     | 20.4 |
| 10 18         | 1 41.71                | + 9 35.8                     | 1.451    | 2.447 | 1.0     | 20.0 | 10 18         | 1 41.21                | + 5 31.9                   | 1.793    | 2.787 | 1.7     | 20.2 |
| 10 28         | 1 31.78                | + 9 8.6                      | 1.484    | 2.468 | 4.1     | 20.3 | 10 28         | 1 33.83                | + 4 35.6                   | 1.799    | 2.778 | 4.4     | 20.4 |
| 11 7          | 1 23.15                | + 8 46.6                     | 1.544    | 2.489 | 8.7     | 20.6 | 11 7          | 1 27.18                | + 3 48.2                   | 1.834    | 2.770 | 8.3     | 20.6 |
| 11 17         | 1 16.69                | + 8 34.4                     | 1.628    | 2.511 | 12.7    | 20.9 | 11 17         | 1 22.03                | + 3 14.5                   | 1.893    | 2.762 | 11.8    | 20.8 |
| 11 27         | 1 12.92                | + 8 34.7                     | 1.734    | 2.531 | 16.0    | 21.2 | 11 27         | 1 18.94                | + 2 57.1                   | 1.974    | 2.755 | 14.9    | 21.0 |
| <b>237924</b> | 2002 PO <sub>178</sub> | 10 20.1 148°41 0°9/21.1 18   |          |       |         |      | <b>21205</b>  | 1994 PV <sub>27</sub>  | 10 20.1 215°65 3°2/16.9 18 |          |       |         |      |
| 9 18          | 2 3.26                 | +16 2.8                      | 2.274    | 3.119 | 11.7    | 21.2 | 9 18          | 2 2.68                 | + 3 11.2                   | 2.109    | 2.986 | 11.2    | 19.1 |
| 9 28          | 1 57.30                | +15 28.3                     | 2.208    | 3.129 | 8.6     | 21.0 | 9 28          | 1 57.05                | + 2 14.4                   | 2.039    | 2.979 | 8.1     | 18.9 |
| 10 8          | 1 49.79                | +14 41.9                     | 2.166    | 3.138 | 5.1     | 20.8 | 10 8          | 1 49.75                | + 1 14.3                   | 1.994    | 2.972 | 4.8     | 18.7 |
| 10 18         | 1 41.40                | +13 46.5                     | 2.153    | 3.147 | 1.5     | 20.6 | 10 18         | 1 41.45                | + 0 16.2                   | 1.978    | 2.965 | 3.2     | 18.6 |
| 10 28         | 1 32.96                | +12 46.9                     | 2.170    | 3.155 | 2.8     | 20.7 | 10 28         | 1 33.00                | - 0 33.9                   | 1.991    | 2.957 | 5.5     | 18.7 |
| 11 7          | 1 25.32                | +11 48.5                     | 2.216    | 3.162 | 6.4     | 20.9 | 11 7          | 1 25.29                | - 1 11.2                   | 2.032    | 2.949 | 8.8     | 18.9 |
| 11 17         | 1 19.14                | +10 56.4                     | 2.291    | 3.169 | 9.7     | 21.1 | 11 17         | 1 19.05                | - 1 32.4                   | 2.098    | 2.940 | 12.0    | 19.1 |
| 11 27         | 1 14.90                | +10 14.9                     | 2.389    | 3.175 | 12.4    | 21.3 | 11 27         | 1 14.81                | - 1 36.2                   | 2.186    | 2.931 | 14.7    | 19.3 |
| <b>473013</b> | 2015 HM <sub>42</sub>  | 10 20.1 243°66 1°3/19.4 18   |          |       |         |      | <b>401789</b> | 2014 FU <sub>57</sub>  | 10 20.1 211°10 2°2/17.8 18 |          |       |         |      |
| 9 18          | 2 15.45                | + 5 55.1                     | 1.745    | 2.604 | 14.0    | 21.0 | 9 18          | 2 2.69                 | + 5 56.4                   | 2.262    | 3.133 | 10.8    | 21.9 |
| 9 28          | 2 6.81                 | + 6 16.2                     | 1.657    | 2.588 | 10.2    | 20.7 | 9 28          | 1 56.98                | + 5 4.0                    | 2.188    | 3.126 | 7.7     | 21.7 |
| 10 8          | 1 55.53                | + 6 34.9                     | 1.594    | 2.572 | 5.8     | 20.4 | 10 8          | 1 49.69                | + 4 6.3                    | 2.139    | 3.119 | 4.4     | 21.5 |
| 10 18         | 1 42.45                | + 6 53.1                     | 1.559    | 2.554 | 1.5     | 20.1 | 10 18         | 1 41.44                | + 3 8.0                    | 2.119    | 3.111 | 2.2     | 21.3 |
| 10 28         | 1 28.84                | + 7 13.3                     | 1.556    | 2.536 | 4.5     | 20.3 | 10 28         | 1 33.05                | + 2 14.3                   | 2.129    | 3.102 | 4.5     | 21.5 |
| 11 7          | 1 16.12                | + 7 38.2                     | 1.581    | 2.518 | 9.3     | 20.5 | 11 7          | 1 25.33                | + 1 30.4                   | 2.168    | 3.093 | 7.9     | 21.7 |
| 11 17         | 1 5.49                 | + 8 10.2                     | 1.634    | 2.499 | 13.6    | 20.7 | 11 17         | 1 19.00                | + 0 59.9                   | 2.233    | 3.083 | 11.1    | 21.9 |
| 11 27         | 0 57.78                | + 8 51.2                     | 1.710    | 2.479 | 17.3    | 20.9 | 11 27         | 1 14.57                | + 0 44.9                   | 2.321    | 3.072 | 13.8    | 22.1 |
| <b>153412</b> | 2001 QR <sub>145</sub> | 10 20.1 359°52 1°3/19.2 18 R |          |       |         |      | <b>40506</b>  | 1999 RB <sub>86</sub>  | 10 20.1 39°10 2°8/18.1 18  |          |       |         |      |
| 9 18          | 1 59.48                | +10 17.9                     | 1.072    | 1.975 | 17.5    | 19.4 | 9 18          | 2 3.20                 | + 5 44.5                   | 1.444    | 2.334 | 14.6    | 18.8 |
| 9 28          | 1 55.87                | + 9 40.0                     | 1.018    | 1.971 | 12.6    | 19.2 | 9 28          | 1 57.84                | + 5 1.8                    | 1.396    | 2.343 | 10.4    | 18.5 |
| 10 8          | 1 49.49                | + 8 48.1                     | 0.984    | 1.969 | 7.0     | 18.9 | 10 8          | 1 50.31                | + 4 13.6                   | 1.370    | 2.352 | 5.9     | 18.3 |
| 10 18         | 1 41.38                | + 7 48.7                     | 0.972    | 1.968 | 1.5     | 18.5 | 10 18         | 1 41.54                | + 3 26.1                   | 1.369    | 2.361 | 2.8     | 18.1 |
| 10 28         | 1 33.07                | + 6 51.6                     | 0.984    | 1.968 | 5.5     | 18.8 | 10 28         | 1 32.76                | + 2 46.6                   | 1.395    | 2.371 | 5.7     | 18.4 |
| 11 7          | 1 26.09                | + 6 6.5                      | 1.018    | 1.970 | 11.2    | 19.1 | 11 7          | 1 25.16                | + 2 20.8                   | 1.446    | 2.382 | 10.1    | 18.6 |
| 11 17         | 1 21.62                | + 5 40.1                     | 1.074    | 1.973 | 16.2    | 19.4 | 11 17         | 1 19.62                | + 2 12.2                   | 1.521    | 2.393 | 14.1    | 18.9 |
| 11 27         | 1 20.32                | + 5 36.1                     | 1.148    | 1.978 | 20.4    | 19.7 | 11 27         | 1 16.71                | + 2 22.2                   | 1.616    | 2.404 | 17.3    | 19.2 |
| <b>439817</b> | 2015 KY <sub>33</sub>  | 10 20.1 281°27 2°3/21.7 18   |          |       |         |      | <b>405273</b> | 2003 SJ <sub>335</sub> | 10 20.1 67°41 2°4/18.0 18  |          |       |         |      |
| 9 18          | 2 4.19                 | +17 51.0                     | 1.514    | 2.373 | 15.8    | 21.4 | 9 18          | 2 2.85                 | + 3 41.4                   | 2.183    | 3.057 | 11.0    | 21.1 |
| 9 28          | 1 58.88                | +17 37.6                     | 1.435    | 2.361 | 11.9    | 21.2 | 9 28          | 1 57.01                | + 3 21.5                   | 2.126    | 3.066 | 7.8     | 20.9 |
| 10 8          | 1 51.10                | +17 5.7                      | 1.378    | 2.349 | 7.5     | 20.9 | 10 8          | 1 49.65                | + 2 59.8                   | 2.095    | 3.074 | 4.5     | 20.7 |
| 10 18         | 1 41.67                | +16 17.4                     | 1.346    | 2.338 | 3.0     | 20.6 | 10 18         | 1 41.43                | + 2 39.9                   | 2.092    | 3.083 | 2.4     | 20.6 |
| 10 28         | 1 31.87                | +15 17.8                     | 1.340    | 2.326 | 4.0     | 20.6 | 10 28         | 1 33.17                | + 2 25.7                   | 2.118    | 3.091 | 4.5     | 20.8 |
| 11 7          | 1 23.05                | +14 15.1                     | 1.361    | 2.315 | 8.8     | 20.9 | 11 7          | 1 25.70                | + 2 20.3                   | 2.172    | 3.100 | 7.7     | 21.0 |
| 11 17         | 1 16.35                | +13 17.9                     | 1.407    | 2.303 | 13.3    | 21.1 | 11 17         | 1 19.68                | + 2 25.9                   | 2.253    | 3.109 | 10.7    | 21.2 |
| 11 27         | 1 12.51                | +12 33.4                     | 1.474    | 2.292 | 17.3    | 21.4 | 11 27         | 1 15.59                | + 2 43.4                   | 2.356    | 3.117 | 13.3    | 21.4 |
| <b>366991</b> | 2005 YC <sub>128</sub> | 10 20.1 304°93 5°1/15.2 18   |          |       |         |      | <b>254885</b> | 2005 SY <sub>31</sub>  | 10 20.1 221°08 1°7/18.5 18 |          |       |         |      |
| 9 18          | 2 0.99                 | - 3 37.2                     | 2.095    | 2.978 | 11.0    | 20.3 | 9 18          | 2 1.30                 | + 7 18.4                   | 2.130    | 3.003 | 11.3    | 21.1 |
| 9 28          | 1 55.79                | - 4 30.1                     | 2.035    | 2.973 | 8.2     | 20.1 | 9 28          | 1 56.04                | + 6 39.7                   | 2.061    | 3.001 | 8.0     | 20.9 |
| 10 8          | 1 49.00                | - 5 20.0                     | 2.001    | 2.969 | 5.8     | 19.9 | 10 8          | 1 49.17                | + 5 55.1                   | 2.018    | 2.999 | 4.5     | 20.7 |
| 10 18         | 1 41.28                | - 6 1.4                      | 1.993    | 2.964 | 5.3     | 19.9 | 10 18         | 1 41.35                | + 5 8.9                    | 2.003    | 2.997 | 1.7     | 20.5 |
| 10 28         | 1 33.46                | - 6 28.9                     | 2.013    | 2.960 | 7.1     | 20.0 | 10 28         | 1 33.42                | + 4 26.2                   | 2.017    | 2.994 | 4.1     | 20.7 |
| 11 7          | 1 26.39                | - 6 39.0                     | 2.060    | 2.955 | 9.9     | 20.2 | 11 7          | 1 26.21                | + 3 51.7                   | 2.059    | 2.992 | 7.7     | 20.9 |
| 11 17         | 1 20.76                | - 6 30.5                     | 2.131    | 2.951 | 12.6    | 20.3 | 11 17         | 1 20.44                | + 3 28.9                   | 2.127    | 2.990 | 11.0    | 21.1 |
| 11 27         | 1 17.08                | - 6 3.9                      | 2.222    | 2.947 | 15.0    | 20.5 | 11 27         | 1 16.62                | + 3 20.2                   | 2.218    | 2.987 | 13.8    | 21.3 |
| <b>71552</b>  | 2000 DR <sub>7</sub>   | 10 20.1 46°67 0°2/19.9 18    |          |       |         |      | <b>352895</b> | 2008 YW <sub>54</sub>  | 10 20.1 288°34 4°2/16.7 18 |          |       |         |      |
| 9 18          | 2 0.63                 | +11 48.2                     | 1.951    | 2.819 | 12.4    | 19.0 | 9 18          | 2 3.12                 | + 1 15.7                   | 1.713    | 2.599 | 12.9    | 21.3 |
| 9 28          | 1 55.55                | +11 16.6                     | 1.898    | 2.834 | 8.8     | 18.9 | 9 28          | 1 57.75                | + 0 26.8                   | 1.641    | 2.585 | 9.4     | 21.1 |
| 10 8          | 1 48.86                | +10 35.8                     | 1.869    | 2.848 | 4.9     | 18.6 | 10 8          | 1 50.33                | - 0 24.0                   | 1.593    | 2.570 | 5.9     | 20.8 |
| 10 18         | 1 41.25                | + 9 49.6                     | 1.868    | 2.863 | 0.8     | 18.4 | 10 18         | 1 41.58                | - 1 10.5                   | 1.570    | 2.555 | 4.3     | 20.7 |
| 10 28         | 1 33.65                | + 9 3.2                      | 1.895    | 2.879 | 3.4     | 18.6 | 10 28         | 1 32.58                | - 1 45.9                   | 1.576    | 2.541 | 6.8     | 20.8 |
| 11 7          | 1 26.92                | + 8 22.0                     | 1.950    | 2.894 | 7.2     | 18.9 | 11 7          | 1 24.41                | - 2 5.0                    | 1.607    | 2.526 | 10.6    | 21.0 |
| 11 17         | 1 21.77                | + 7 50.3                     | 2.030    | 2.910 | 10.7    | 19.1 | 11 17         | 1 18.02                | - 2 4.7                    | 1.662    | 2.512 | 14.2    | 21.2 |
| 11 27         | 1 18.65                | + 7 31.1                     | 2.134    | 2.926 | 13.5    | 19.4 | 11 27         | 1 14.03                | - 1 44.6                   | 1.738    | 2.497 | 17.4    | 21.4 |
| <b>52433</b>  | 1994 PZ <sub>15</sub>  | 10 20.1 23°50 0°8/20.6 18    |          |       |         |      | <b>301764</b> | 2010 JQ <sub>44</sub>  | 10 20.1 166°31 0°4/20.5 18 |          |       |         |      |
| 9 18          | 2 1.15                 | +14 31.3                     | 1.028    | 1.922 | 18.8    | 18.6 | 9 18          | 2 3.25                 | +13 49.1                   | 1.970    | 2.828 | 12.7    | 21.9 |
| 9 28          | 1 57.01                | +14 4.8                      | 0.986    | 1.933 | 13.7    | 18.4 | 9 28          | 1 57.56                | +13 19.1                   | 1.901    | 2.831 | 9.2     | 21.7 |
| 10 8          | 1 50.0                 |                              |          |       |         |      |               |                        |                            |          |       |         |      |

EPHEMERIDES

10 20.1

10 20.1

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$          | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$          | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------|--------------|---------|------|---------------|-------------------------------|-----------------|----------|--------------|---------|------|
| <b>241755</b> | 2001 <i>CB</i> <sub>34</sub>  | 10 20.1 254°92  |          | 3°0/17.8 18  |         |      | <b>264484</b> | 2001 <i>OE</i> <sub>40</sub>  | 10 20.1 85°01   |          | 11°7/29.5 18 |         |      |
| 9 18          | 2 5.98                        | + 2 59.6        | 1.909    | 2.784        | 12.3    | 20.6 | 9 18          | 2 18.62                       | +39 11.8        | 1.667    | 2.395        | 20.0    | 19.9 |
| 9 28          | 1 59.66                       | + 2 35.9        | 1.832    | 2.771        | 8.9     | 20.3 | 9 28          | 2 9.66                        | +40 51.9        | 1.615    | 2.419        | 17.4    | 19.8 |
| 10 8          | 1 51.34                       | + 2 10.0        | 1.779    | 2.758        | 5.2     | 20.1 | 10 8          | 1 57.35                       | +42 0.9         | 1.582    | 2.442        | 14.8    | 19.7 |
| 10 18         | 1 41.76                       | + 1 46.3        | 1.754    | 2.744        | 3.0     | 19.9 | 10 18         | 1 42.87                       | +42 31.9        | 1.570    | 2.466        | 12.7    | 19.6 |
| 10 28         | 1 31.92                       | + 1 29.7        | 1.758    | 2.730        | 5.4     | 20.0 | 10 28         | 1 28.05                       | +42 22.9        | 1.582    | 2.489        | 11.7    | 19.6 |
| 11 7          | 1 22.86                       | + 1 24.3        | 1.790    | 2.716        | 9.2     | 20.2 | 11 7          | 1 14.83                       | +41 39.6        | 1.618    | 2.511        | 12.2    | 19.7 |
| 11 17         | 1 15.49                       | + 1 32.7        | 1.847    | 2.701        | 12.8    | 20.4 | 11 17         | 1 4.65                        | +40 32.6        | 1.679    | 2.534        | 13.8    | 19.8 |
| 11 27         | 1 10.43                       | + 1 56.1        | 1.926    | 2.687        | 15.9    | 20.6 | 11 27         | 0 58.31                       | +39 15.1        | 1.760    | 2.555        | 15.8    | 20.0 |
| <b>243277</b> | 2008 <i>CL</i> <sub>43</sub>  | 10 20.1 351°79  |          | 5°6/15.0 18  |         |      | <b>481874</b> | 2008 <i>YY</i> <sub>114</sub> | 10 20.1 347°84  |          | 5°6/16.6 17  |         |      |
| 9 18          | 2 0.36                        | - 2 5.8         | 1.757    | 2.647        | 12.4    | 20.1 | 9 18          | 1 57.87                       | + 1 13.4        | 1.045    | 1.961        | 16.6    | 20.3 |
| 9 28          | 1 55.58                       | - 3 18.6        | 1.702    | 2.645        | 9.2     | 19.9 | 9 28          | 1 54.85                       | + 0 24.8        | 0.987    | 1.945        | 12.2    | 20.0 |
| 10 8          | 1 48.99                       | - 4 29.9        | 1.672    | 2.644        | 6.4     | 19.7 | 10 8          | 1 49.04                       | - 0 25.9        | 0.949    | 1.932        | 7.7     | 19.8 |
| 10 18         | 1 41.34                       | - 5 32.2        | 1.668    | 2.642        | 5.7     | 19.7 | 10 18         | 1 41.42                       | - 1 9.5         | 0.933    | 1.920        | 5.7     | 19.6 |
| 10 28         | 1 33.59                       | - 6 18.4        | 1.691    | 2.641        | 7.9     | 19.8 | 10 28         | 1 33.45                       | - 1 35.9        | 0.939    | 1.910        | 8.9     | 19.8 |
| 11 7          | 1 26.73                       | - 6 43.8        | 1.739    | 2.640        | 11.1    | 20.0 | 11 7          | 1 26.72                       | - 1 38.1        | 0.966    | 1.903        | 13.7    | 20.0 |
| 11 17         | 1 21.54                       | - 6 46.6        | 1.811    | 2.640        | 14.2    | 20.2 | 11 17         | 1 22.43                       | - 1 13.5        | 1.013    | 1.897        | 18.4    | 20.3 |
| 11 27         | 1 18.54                       | - 6 27.4        | 1.902    | 2.640        | 16.8    | 20.4 | 11 27         | 1 21.35                       | - 0 22.9        | 1.077    | 1.894        | 22.3    | 20.5 |
| <b>61101</b>  | 2000 <i>LD</i> <sub>30</sub>  | 10 20.1 83°69   |          | 4°6/17.2 17  |         |      | <b>326378</b> | 2001 <i>DK</i> <sub>79</sub>  | 10 20.1 45°81   |          | 3°3/23.7 18  |         |      |
| 9 18          | 2 8.86                        | + 2 18.2        | 1.276    | 2.166        | 16.1    | 19.4 | 9 18          | 2 0.46                        | +23 22.5        | 2.221    | 3.043        | 12.8    | 20.1 |
| 9 28          | 2 1.89                        | + 1 21.5        | 1.242    | 2.188        | 11.5    | 19.2 | 9 28          | 1 55.51                       | +23 1.2         | 2.144    | 3.043        | 9.9     | 19.9 |
| 10 8          | 1 52.52                       | + 0 23.6        | 1.230    | 2.209        | 6.9     | 19.0 | 10 8          | 1 48.93                       | +22 22.7        | 2.090    | 3.044        | 6.8     | 19.7 |
| 10 18         | 1 41.93                       | - 0 27.2        | 1.244    | 2.231        | 4.6     | 18.9 | 10 18         | 1 41.37                       | +21 28.5        | 2.063    | 3.044        | 3.9     | 19.6 |
| 10 28         | 1 31.57                       | - 1 3.1         | 1.283    | 2.252        | 7.4     | 19.1 | 10 28         | 1 33.67                       | +20 22.5        | 2.064    | 3.044        | 3.7     | 19.5 |
| 11 7          | 1 22.78                       | - 1 19.1        | 1.348    | 2.273        | 11.7    | 19.4 | 11 7          | 1 26.73                       | +19 10.6        | 2.094    | 3.045        | 6.3     | 19.7 |
| 11 17         | 1 16.45                       | - 1 13.6        | 1.435    | 2.293        | 15.6    | 19.7 | 11 17         | 1 21.25                       | +17 59.4        | 2.152    | 3.045        | 9.5     | 19.9 |
| 11 27         | 1 13.08                       | - 0 47.5        | 1.541    | 2.313        | 18.7    | 20.0 | 11 27         | 1 17.76                       | +16 55.0        | 2.234    | 3.046        | 12.3    | 20.1 |
| <b>166493</b> | 2002 <i>PV</i> <sub>168</sub> | 10 20.1 60°13   |          | 0°9/20.8 18  |         |      | <b>21640</b>  | Petekirkland                  | 10 20.1 345°87  |          | 3°5/21.8 18  |         |      |
| 9 18          | 2 3.70                        | +14 24.1        | 1.671    | 2.536        | 14.3    | 20.7 | 9 18          | 2 3.88                        | +16 18.4        | 1.030    | 1.916        | 19.4    | 17.2 |
| 9 28          | 1 58.07                       | +14 6.0         | 1.614    | 2.546        | 10.4    | 20.5 | 9 28          | 1 59.54                       | +16 57.0        | 0.966    | 1.905        | 14.8    | 16.8 |
| 10 8          | 1 50.42                       | +13 34.9        | 1.580    | 2.556        | 6.1     | 20.3 | 10 8          | 1 51.89                       | +17 18.1        | 0.920    | 1.896        | 9.4     | 16.5 |
| 10 18         | 1 41.59                       | +12 54.1        | 1.571    | 2.566        | 1.6     | 20.0 | 10 18         | 1 41.95                       | +17 20.9        | 0.896    | 1.888        | 4.3     | 16.2 |
| 10 28         | 1 32.71                       | +12 9.0         | 1.590    | 2.576        | 3.5     | 20.2 | 10 28         | 1 31.45                       | +17 8.7         | 0.895    | 1.881        | 5.3     | 16.3 |
| 11 7          | 1 24.87                       | +11 26.1        | 1.637    | 2.587        | 7.9     | 20.5 | 11 7          | 1 22.31                       | +16 48.8        | 0.917    | 1.876        | 10.8    | 16.6 |
| 11 17         | 1 18.93                       | +10 50.9        | 1.709    | 2.597        | 11.8    | 20.8 | 11 17         | 1 16.05                       | +16 29.9        | 0.959    | 1.873        | 16.2    | 16.8 |
| 11 27         | 1 15.45                       | +10 28.0        | 1.803    | 2.608        | 15.1    | 21.0 | 11 27         | 1 13.60                       | +16 20.2        | 1.019    | 1.870        | 20.8    | 17.1 |
| <b>373378</b> | 2012 <i>MB</i> <sub>3</sub>   | 10 20.1 163°04  |          | 3°3/15.2 18  |         |      | <b>410963</b> | 2009 <i>SS</i> <sub>360</sub> | 10 20.1 85°78   |          | 0°5/19.7 18  |         |      |
| 9 18          | 1 58.04                       | - 0 55.9        | 3.153    | 4.027        | 8.0     | 21.8 | 9 18          | 2 3.80                        | + 9 24.5        | 2.215    | 3.078        | 11.3    | 21.1 |
| 9 28          | 1 53.24                       | - 2 2.9         | 3.096    | 4.032        | 5.8     | 21.6 | 9 28          | 1 57.74                       | + 9 18.8        | 2.152    | 3.086        | 8.1     | 20.9 |
| 10 8          | 1 47.44                       | - 3 9.5         | 3.067    | 4.037        | 3.9     | 21.5 | 10 8          | 1 50.12                       | + 9 7.2         | 2.115    | 3.094        | 4.5     | 20.7 |
| 10 18         | 1 41.07                       | - 4 11.5        | 3.068    | 4.042        | 3.4     | 21.5 | 10 18         | 1 41.57                       | + 8 52.1        | 2.106    | 3.101        | 0.8     | 20.4 |
| 10 28         | 1 34.66                       | - 5 5.0         | 3.099    | 4.046        | 4.9     | 21.6 | 10 28         | 1 32.95                       | + 8 37.1        | 2.126    | 3.109        | 3.2     | 20.6 |
| 11 7          | 1 28.75                       | - 5 46.7        | 3.159    | 4.049        | 7.0     | 21.8 | 11 7          | 1 25.11                       | + 8 25.5        | 2.175    | 3.117        | 6.8     | 20.9 |
| 11 17         | 1 23.79                       | - 6 14.8        | 3.245    | 4.053        | 9.0     | 21.9 | 11 17         | 1 18.73                       | + 8 20.6        | 2.252    | 3.124        | 10.1    | 21.1 |
| 11 27         | 1 20.12                       | - 6 28.6        | 3.354    | 4.055        | 10.8    | 22.0 | 11 27         | 1 14.32                       | + 8 24.6        | 2.352    | 3.132        | 12.8    | 21.3 |
| <b>136042</b> | 2002 <i>WJ</i> <sub>12</sub>  | 10 20.1 11°09   |          | 15°2/ 8.3 18 |         |      | <b>69571</b>  | 1998 <i>BJ</i> <sub>25</sub>  | 10 20.1 267°13  |          | 1°1/19.4 18  |         |      |
| 9 18          | 1 58.79                       | -20 40.2        | 1.149    | 2.036        | 17.8    | 17.8 | 9 18          | 2 5.85                        | + 9 52.2        | 1.442    | 2.321        | 15.3    | 18.9 |
| 9 28          | 1 55.04                       | -22 31.9        | 1.132    | 2.041        | 15.9    | 17.7 | 9 28          | 2 0.12                        | + 9 23.2        | 1.369    | 2.310        | 11.1    | 18.6 |
| 10 8          | 1 48.83                       | -23 54.3        | 1.134    | 2.048        | 15.2    | 17.7 | 10 8          | 1 51.85                       | + 8 43.1        | 1.318    | 2.299        | 6.2     | 18.3 |
| 10 18         | 1 41.31                       | -24 36.4        | 1.155    | 2.056        | 15.8    | 17.7 | 10 18         | 1 41.92                       | + 7 56.5        | 1.292    | 2.287        | 1.3     | 17.9 |
| 10 28         | 1 33.92                       | -24 32.2        | 1.195    | 2.067        | 17.5    | 17.9 | 10 28         | 1 31.63                       | + 7 10.1        | 1.293    | 2.276        | 4.8     | 18.2 |
| 11 7          | 1 27.98                       | -23 43.1        | 1.253    | 2.078        | 19.6    | 18.1 | 11 7          | 1 22.37                       | + 6 31.5        | 1.320    | 2.264        | 10.0    | 18.4 |
| 11 17         | 1 24.36                       | -22 15.6        | 1.327    | 2.092        | 21.7    | 18.3 | 11 17         | 1 15.29                       | + 6 6.7         | 1.371    | 2.252        | 14.6    | 18.7 |
| 11 27         | 1 23.55                       | -20 17.9        | 1.415    | 2.107        | 23.5    | 18.5 | 11 27         | 1 11.14                       | + 5 59.7        | 1.441    | 2.240        | 18.6    | 18.9 |
| <b>102160</b> | 1999 <i>RG</i> <sub>216</sub> | 10 20.1 2°81    |          | 4°1/17.5 18  |         |      | <b>312898</b> | 2011 <i>UT</i> <sub>285</sub> | 10 20.1 250°34  |          | 1°8/18.5 18  |         |      |
| 9 18          | 2 1.49                        | + 4 52.9        | 1.075    | 1.982        | 17.1    | 18.2 | 9 18          | 2 2.70                        | + 7 3.4         | 2.034    | 2.907        | 11.7    | 21.5 |
| 9 28          | 1 57.26                       | + 3 56.0        | 1.025    | 1.980        | 12.2    | 18.0 | 9 28          | 1 57.20                       | + 6 26.4        | 1.958    | 2.897        | 8.4     | 21.2 |
| 10 8          | 1 50.27                       | + 2 52.2        | 0.995    | 1.979        | 7.1     | 17.7 | 10 8          | 1 49.94                       | + 5 43.2        | 1.906    | 2.887        | 4.7     | 21.0 |
| 10 18         | 1 41.59                       | + 1 50.6        | 0.989    | 1.980        | 4.1     | 17.5 | 10 18         | 1 41.57                       | + 4 58.1        | 1.882    | 2.876        | 1.8     | 20.8 |
| 10 28         | 1 32.77                       | + 1 1.4         | 1.006    | 1.982        | 7.5     | 17.7 | 10 28         | 1 33.00                       | + 4 16.3        | 1.887    | 2.865        | 4.4     | 21.0 |
| 11 7          | 1 25.34                       | + 0 32.9        | 1.045    | 1.984        | 12.6    | 18.0 | 11 7          | 1 25.15                       | + 3 43.1        | 1.920    | 2.854        | 8.2     | 21.2 |
| 11 17         | 1 20.44                       | + 0 29.0        | 1.105    | 1.988        | 17.3    | 18.3 | 11 17         | 1 18.81                       | + 3 22.1        | 1.979    | 2.842        | 11.7    | 21.4 |
| 11 27         | 1 18.72                       | + 0 50.2        | 1.183    | 1.992        | 21.2    | 18.6 | 11 27         | 1 14.57                       | + 3 16.0        | 2.061    | 2.831        | 14.7    | 21.6 |
| <b>408534</b> | 2013 <i>JD</i> <sub>51</sub>  | 10 20.1 35°48   |          | 3°9/16.7 17  |         |      | <b>212366</b> | 2006 <i>GQ</i> <sub>31</sub>  | 10 20.1 141°74  |          | 0°1/20.2 17  |         |      |
| 9 18          | 2 0.98                        | + 0 57.2        | 1.825    | 2.712        | 12.2    | 20.5 | 9 18          | 2 6.00                        | +13 58.5        | 1.506    | 2.374        | 15.4    | 20.4 |
| 9 28          | 1 55.86                       | + 0 12.7        | 1.781    | 2.725        | 8.7     | 20.3 | 9 28          | 1 59.92                       | +13 8.6         | 1.447    | 2.381        | 11.2    | 20.2 |
| 10 8          | 1 49.06                       | - 0 31.6        | 1.761    | 2.739        | 5.4     | 20.2 | 10 8          | 1 51.55                       | +12 3.1         | 1.410    | 2.389        | 6.3     | 19.9 |
| 10 18         | 1 41.35                       | - 1 10.2        | 1.768    | 2.753        | 4.0     | 20.1 | 10 18         | 1 41.84                       | +10 47.5        | 1.400    | 2.395        | 1.1     | 19.6 |
| 10 28         | 1 33.68                       | - 1 37.7        | 1.803    | 2.767        | 6.1     | 20.3 | 10 28         | 1 32.08                       | + 9 29.7        | 1.417    | 2.402        | 4.1     | 19.8 |
| 11 7          | 1 26.94                       | - 1 50.3        | 1.864    | 2.782        | 9.4     | 20.5 | 11 7          | 1 23.51                       | + 8 18.6        | 1.461    | 2.407        | 9.0     | 20.1 |
| 11 17         | 1 21.83                       | - 1 46.3        | 1.949    | 2.798        | 12.5    | 20.7 | 11 17         | 1 17.08                       | + 7 21.5        | 1.530    | 2.413        | 13.3    | 20.4 |
| 11 27         | 1 18.83                       | - 1 25.7        | 2.055    | 2.813        | 15.1    | 20.9 | 11 27         | 1 13.40                       | + 6 43.1        | 1.621    | 2.418        | 16.9    | 20.7 |
| <b>66666</b>  | 1999 <i>TL</i> <sub>9</sub>   | 10 20.1 357°22  |          | 0°8/20.5 18  |         |      | <b>72491</b>  | 2001 <i>DR</i> <sub>49</sub>  | 10 20.1 76°08   |          | 14°8/ 4.9 18 |         |      |
| 9 18          | 2 5.73                        | +               |          |              |         |      |               |                               |                 |          |              |         |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$              | $\Delta$ | $r$   | $\beta$ | $V$  | 2020          | $\alpha_{2000}$              | $\delta_{2000}$            | $\Delta$ | $r$   | $\beta$ | $V$  |
|---------------|-------------------------------|------------------------------|----------|-------|---------|------|---------------|------------------------------|----------------------------|----------|-------|---------|------|
| <b>362314</b> | 2009 <i>UH</i> <sub>134</sub> | 10 20.1 282°40 0°7/18.8 18   |          |       |         |      | <b>167818</b> | 2005 <i>CH</i> <sub>8</sub>  | 10 20.1 135°55 0°1/20.2 18 |          |       |         |      |
| 9 18          | 1 54.13                       | + 7 41.5                     | 4.320    | 5.183 | 6.3     | 21.8 | 9 18          | 2 4.30                       | +12 36.3                   | 2.067    | 2.924 | 12.2    | 20.6 |
| 9 28          | 1 50.32                       | + 7 18.6                     | 4.243    | 5.177 | 4.4     | 21.7 | 9 28          | 1 58.20                      | +12 9.6                    | 2.004    | 2.934 | 8.8     | 20.4 |
| 10 8          | 1 45.79                       | + 6 53.1                     | 4.193    | 5.172 | 2.4     | 21.5 | 10 8          | 1 50.41                      | +11 33.3                   | 1.967    | 2.944 | 5.0     | 20.2 |
| 10 18         | 1 40.83                       | + 6 26.5                     | 4.172    | 5.167 | 0.7     | 21.4 | 10 18         | 1 41.66                      | +10 50.5                   | 1.957    | 2.953 | 0.9     | 20.0 |
| 10 28         | 1 35.80                       | + 6 1.0                      | 4.183    | 5.162 | 2.1     | 21.5 | 10 28         | 1 32.85                      | +10 5.9                    | 1.977    | 2.962 | 3.2     | 20.2 |
| 11 7          | 1 31.08                       | + 5 38.7                     | 4.223    | 5.156 | 4.1     | 21.7 | 11 7          | 1 24.91                      | + 9 24.8                   | 2.026    | 2.970 | 7.1     | 20.4 |
| 11 17         | 1 27.00                       | + 5 21.3                     | 4.293    | 5.151 | 6.0     | 21.8 | 11 17         | 1 18.55                      | + 8 51.6                   | 2.102    | 2.978 | 10.5    | 20.7 |
| 11 27         | 1 23.83                       | + 5 10.4                     | 4.387    | 5.146 | 7.6     | 21.9 | 11 27         | 1 14.29                      | + 8 29.9                   | 2.201    | 2.985 | 13.4    | 20.9 |
| <b>361875</b> | 2008 <i>FU</i> <sub>22</sub>  | 10 20.1 172°51 2°3/17.9 18   |          |       |         |      | <b>476722</b> | 2008 <i>UT</i> <sub>6</sub>  | 10 20.1 344°61 0°2/20.3 16 |          |       |         |      |
| 9 18          | 2 2.32                        | + 4 47.9                     | 2.200    | 3.074 | 11.0    | 21.6 | 9 18          | 1 56.70                      | +13 22.7                   | 1.080    | 1.980 | 17.6    | 21.2 |
| 9 28          | 1 56.71                       | + 4 13.6                     | 2.135    | 3.075 | 7.8     | 21.4 | 9 28          | 1 54.08                      | +12 53.8                   | 1.013    | 1.963 | 12.9    | 20.9 |
| 10 8          | 1 49.56                       | + 3 36.0                     | 2.096    | 3.076 | 4.5     | 21.2 | 10 8          | 1 48.68                      | +12 5.9                    | 0.965    | 1.948 | 7.5     | 20.5 |
| 10 18         | 1 41.50                       | + 2 59.1                     | 2.085    | 3.076 | 2.3     | 21.1 | 10 18         | 1 41.40                      | +11 4.0                    | 0.939    | 1.935 | 1.4     | 20.1 |
| 10 28         | 1 33.35                       | + 2 27.6                     | 2.103    | 3.077 | 4.5     | 21.2 | 10 28         | 1 33.71                      | + 9 57.2                   | 0.937    | 1.924 | 4.8     | 20.3 |
| 11 7          | 1 25.93                       | + 2 5.5                      | 2.150    | 3.077 | 7.8     | 21.5 | 11 7          | 1 27.16                      | + 8 56.3                   | 0.957    | 1.914 | 10.8    | 20.6 |
| 11 17         | 1 19.93                       | + 1 55.5                     | 2.223    | 3.077 | 10.9    | 21.7 | 11 17         | 1 23.05                      | + 8 11.0                   | 0.997    | 1.906 | 16.2    | 20.9 |
| 11 27         | 1 15.83                       | + 1 59.1                     | 2.318    | 3.078 | 13.5    | 21.8 | 11 27         | 1 22.18                      | + 7 47.4                   | 1.056    | 1.901 | 20.7    | 21.1 |
| <b>439579</b> | 2014 <i>DQ</i> <sub>105</sub> | 10 20.1 192°08 4°0/23.7 18   |          |       |         |      | <b>132515</b> | 2002 <i>JT</i> <sub>48</sub> | 10 20.1 102°22 2°2/22.2 18 |          |       |         |      |
| 9 18          | 2 5.53                        | +23 22.7                     | 2.038    | 2.857 | 13.9    | 21.0 | 9 18          | 2 2.46                       | +19 49.3                   | 1.772    | 2.618 | 14.5    | 19.7 |
| 9 28          | 1 59.36                       | +23 28.1                     | 1.959    | 2.856 | 10.9    | 20.8 | 9 28          | 1 57.19                      | +19 10.5                   | 1.706    | 2.624 | 10.9    | 19.5 |
| 10 8          | 1 51.21                       | +23 16.1                     | 1.904    | 2.854 | 7.6     | 20.6 | 10 8          | 1 49.96                      | +18 13.1                   | 1.663    | 2.630 | 6.8     | 19.3 |
| 10 18         | 1 41.81                       | +22 46.7                     | 1.874    | 2.853 | 4.6     | 20.4 | 10 18         | 1 41.59                      | +17 0.5                    | 1.646    | 2.637 | 2.9     | 19.1 |
| 10 28         | 1 32.18                       | +22 2.8                      | 1.873    | 2.850 | 4.4     | 20.4 | 10 28         | 1 33.13                      | +15 38.7                   | 1.657    | 2.643 | 3.5     | 19.1 |
| 11 7          | 1 23.39                       | +21 9.8                      | 1.900    | 2.848 | 7.1     | 20.6 | 11 7          | 1 25.66                      | +14 16.1                   | 1.697    | 2.649 | 7.4     | 19.4 |
| 11 17         | 1 16.32                       | +20 14.5                     | 1.954    | 2.845 | 10.4    | 20.8 | 11 17         | 1 20.00                      | +13 0.5                    | 1.762    | 2.655 | 11.3    | 19.6 |
| 11 27         | 1 11.60                       | +19 23.6                     | 2.032    | 2.842 | 13.5    | 21.0 | 11 27         | 1 16.72                      | +11 58.2                   | 1.851    | 2.660 | 14.6    | 19.9 |
| <b>130183</b> | 2000 <i>AS</i> <sub>58</sub>  | 10 20.1 291°64 7°2/27.1 18   |          |       |         |      | <b>254901</b> | 2005 <i>SV</i> <sub>82</sub> | 10 20.1 291°67 0°6/20.7 18 |          |       |         |      |
| 9 18          | 2 3.90                        | +33 23.4                     | 2.288    | 3.049 | 14.3    | 19.6 | 9 18          | 2 1.74                       | +14 0.4                    | 2.016    | 2.875 | 12.4    | 21.1 |
| 9 28          | 1 58.41                       | +33 56.6                     | 2.185    | 3.026 | 12.2    | 19.4 | 9 28          | 1 56.54                      | +13 38.4                   | 1.942    | 2.872 | 9.1     | 20.8 |
| 10 8          | 1 50.82                       | +34 9.4                      | 2.103    | 3.003 | 9.9     | 19.2 | 10 8          | 1 49.58                      | +13 5.2                    | 1.892    | 2.868 | 5.3     | 20.6 |
| 10 18         | 1 41.77                       | +33 58.9                     | 2.044    | 2.979 | 8.0     | 19.1 | 10 18         | 1 41.54                      | +12 23.7                   | 1.869    | 2.864 | 1.3     | 20.3 |
| 10 28         | 1 32.22                       | +33 25.0                     | 2.012    | 2.956 | 7.2     | 19.0 | 10 28         | 1 33.32                      | +11 38.3                   | 1.875    | 2.860 | 3.1     | 20.5 |
| 11 7          | 1 23.29                       | +32 31.3                     | 2.006    | 2.933 | 8.3     | 19.0 | 11 7          | 1 25.87                      | +10 54.6                   | 1.909    | 2.857 | 7.1     | 20.7 |
| 11 17         | 1 15.96                       | +31 23.9                     | 2.027    | 2.909 | 10.5    | 19.1 | 11 17         | 1 19.96                      | +10 17.7                   | 1.969    | 2.853 | 10.7    | 20.9 |
| 11 27         | 1 10.97                       | +30 11.2                     | 2.072    | 2.886 | 13.1    | 19.2 | 11 27         | 1 16.16                      | + 9 51.7                   | 2.053    | 2.849 | 13.8    | 21.1 |
| <b>487342</b> | 2014 <i>QF</i> <sub>200</sub> | 10 20.1 64°55 4°5/24.6 18    |          |       |         |      | <b>144309</b> | 2004 <i>DR</i> <sub>12</sub> | 10 20.1 287°50 4°1/16.9 18 |          |       |         |      |
| 9 18          | 2 3.10                        | +25 26.3                     | 2.144    | 2.954 | 13.6    | 21.1 | 9 18          | 2 2.99                       | + 4 2.5                    | 1.430    | 2.322 | 14.6    | 20.3 |
| 9 28          | 1 57.48                       | +25 37.6                     | 2.076    | 2.963 | 10.8    | 20.9 | 9 28          | 1 58.05                      | + 2 52.8                   | 1.358    | 2.306 | 10.5    | 20.0 |
| 10 8          | 1 50.07                       | +25 31.2                     | 2.031    | 2.973 | 7.8     | 20.8 | 10 8          | 1 50.70                      | + 1 35.9                   | 1.309    | 2.290 | 6.3     | 19.8 |
| 10 18         | 1 41.60                       | +25 7.2                      | 2.011    | 2.982 | 5.2     | 20.6 | 10 18         | 1 41.76                      | + 0 19.9                   | 1.285    | 2.274 | 4.2     | 19.6 |
| 10 28         | 1 33.00                       | +24 28.1                     | 2.019    | 2.992 | 4.7     | 20.6 | 10 28         | 1 32.48                      | - 0 45.5                   | 1.288    | 2.258 | 7.3     | 19.7 |
| 11 7          | 1 25.25                       | +23 39.1                     | 2.056    | 3.002 | 6.8     | 20.8 | 11 7          | 1 24.18                      | - 1 32.3                   | 1.316    | 2.242 | 11.8    | 20.0 |
| 11 17         | 1 19.11                       | +22 46.3                     | 2.119    | 3.012 | 9.7     | 21.0 | 11 17         | 1 17.93                      | - 1 55.4                   | 1.366    | 2.226 | 16.1    | 20.2 |
| 11 27         | 1 15.13                       | +21 56.2                     | 2.206    | 3.022 | 12.4    | 21.2 | 11 27         | 1 14.48                      | - 1 53.3                   | 1.435    | 2.210 | 19.7    | 20.4 |
| <b>830</b>    | Petropolitana                 | 10 20.1 321°39 1°4/21.4 18 R |          |       |         |      | <b>316303</b> | 2010 <i>RV</i> <sub>62</sub> | 10 20.1 70°75 4°6/23.1 18  |          |       |         |      |
| 9 18          | 2 0.87                        | +16 2.2                      | 2.215    | 3.065 | 11.8    | 14.0 | 9 18          | 2 8.74                       | +21 31.4                   | 1.256    | 2.107 | 18.9    | 20.9 |
| 9 28          | 1 55.81                       | +15 51.4                     | 2.137    | 3.060 | 8.7     | 13.8 | 9 28          | 2 2.39                       | +21 48.9                   | 1.202    | 2.119 | 14.6    | 20.6 |
| 10 8          | 1 49.12                       | +15 29.3                     | 2.084    | 3.056 | 5.3     | 13.6 | 10 8          | 1 53.15                      | +21 43.0                   | 1.169    | 2.131 | 9.8     | 20.4 |
| 10 18         | 1 41.44                       | +14 57.9                     | 2.059    | 3.051 | 1.9     | 13.3 | 10 18         | 1 42.18                      | +21 14.0                   | 1.159    | 2.143 | 5.5     | 20.2 |
| 10 28         | 1 33.58                       | +14 20.6                     | 2.062    | 3.047 | 2.9     | 13.4 | 10 28         | 1 31.09                      | +20 26.6                   | 1.173    | 2.156 | 5.4     | 20.3 |
| 11 7          | 1 26.40                       | +13 42.2                     | 2.093    | 3.043 | 6.4     | 13.6 | 11 7          | 1 21.53                      | +19 29.8                   | 1.214    | 2.168 | 9.5     | 20.5 |
| 11 17         | 1 20.62                       | +13 7.5                      | 2.152    | 3.039 | 9.8     | 13.8 | 11 17         | 1 14.68                      | +18 33.7                   | 1.277    | 2.180 | 13.9    | 20.8 |
| 11 27         | 1 16.79                       | +12 40.8                     | 2.235    | 3.035 | 12.7    | 14.0 | 11 27         | 1 11.19                      | +17 47.3                   | 1.362    | 2.192 | 17.7    | 21.1 |
| <b>365396</b> | 2009 <i>WH</i> <sub>49</sub>  | 10 20.1 279°40 3°8/16.5 18   |          |       |         |      | <b>445829</b> | 2012 <i>CG</i> <sub>18</sub> | 10 20.1 255°40 0°2/20.3 18 |          |       |         |      |
| 9 18          | 2 1.41                        | - 0 37.5                     | 2.290    | 3.168 | 10.4    | 20.6 | 9 18          | 2 1.19                       | +13 14.4                   | 2.247    | 3.104 | 11.4    | 21.9 |
| 9 28          | 1 56.04                       | - 1 14.2                     | 2.224    | 3.163 | 7.6     | 20.4 | 9 28          | 1 56.04                      | +12 42.8                   | 2.163    | 3.092 | 8.3     | 21.7 |
| 10 8          | 1 49.19                       | - 1 50.2                     | 2.184    | 3.158 | 4.9     | 20.2 | 10 8          | 1 49.27                      | +12 0.9                    | 2.104    | 3.081 | 4.7     | 21.5 |
| 10 18         | 1 41.44                       | - 2 21.0                     | 2.172    | 3.152 | 3.8     | 20.1 | 10 18         | 1 41.49                      | +11 11.6                   | 2.073    | 3.068 | 0.9     | 21.2 |
| 10 28         | 1 33.59                       | - 2 42.2                     | 2.188    | 3.147 | 5.7     | 20.2 | 10 28         | 1 33.50                      | +10 19.4                   | 2.071    | 3.056 | 3.0     | 21.3 |
| 11 7          | 1 26.41                       | - 2 50.5                     | 2.232    | 3.142 | 8.5     | 20.4 | 11 7          | 1 26.15                      | + 9 29.6                   | 2.099    | 3.043 | 6.8     | 21.5 |
| 11 17         | 1 20.56                       | - 2 44.2                     | 2.302    | 3.137 | 11.3    | 20.6 | 11 17         | 1 20.17                      | + 8 47.2                   | 2.153    | 3.030 | 10.2    | 21.7 |
| 11 27         | 1 16.53                       | - 2 22.9                     | 2.394    | 3.132 | 13.7    | 20.8 | 11 27         | 1 16.10                      | + 8 16.0                   | 2.231    | 3.017 | 13.2    | 21.9 |
| <b>399196</b> | 2014 <i>GD</i> <sub>15</sub>  | 10 20.1 119°29 2°3/17.9 18   |          |       |         |      | <b>115908</b> | 2003 <i>WZ</i> <sub>1</sub>  | 10 20.1 266°36 1°1/18.8 18 |          |       |         |      |
| 9 18          | 2 2.97                        | + 6 0.6                      | 2.018    | 2.892 | 11.8    | 21.7 | 9 18          | 1 58.33                      | +10 15.6                   | 2.432    | 3.300 | 10.3    | 19.9 |
| 9 28          | 1 57.21                       | + 5 10.9                     | 1.964    | 2.904 | 8.3     | 21.6 | 9 28          | 1 53.84                      | + 9 14.0                   | 2.354    | 3.290 | 7.3     | 19.7 |
| 10 8          | 1 49.83                       | + 4 16.6                     | 1.935    | 2.915 | 4.7     | 21.4 | 10 8          | 1 47.97                      | + 8 4.0                    | 2.301    | 3.281 | 4.0     | 19.5 |
| 10 18         | 1 41.55                       | + 3 22.5                     | 1.934    | 2.926 | 2.3     | 21.2 | 10 18         | 1 41.26                      | + 6 49.6                   | 2.277    | 3.272 | 1.1     | 19.2 |
| 10 28         | 1 33.26                       | + 2 34.4                     | 1.962    | 2.937 | 4.7     | 21.4 | 10 28         | 1 34.42                      | + 5 36.5                   | 2.283    | 3.262 | 3.5     | 19.4 |
| 11 7          | 1 25.84                       | + 1 57.1                     | 2.019    | 2.947 | 8.2     | 21.6 | 11 7          | 1 28.17                      | + 4 30.1                   | 2.318    | 3.253 | 6.9     | 19.6 |
| 11 17         | 1 19.99                       | + 1 33.9                     | 2.101    | 2.957 | 11.4    | 21.9 | 11 17         | 1 23.12                      | + 3 34.9                   | 2.380    | 3.243 | 10.0    | 19.8 |
| 11 27         | 1 16.17                       | + 1 26.4                     | 2.205    | 2.966 | 14.1    | 22.1 | 11 27         | 1 19.75                      | + 2 54.3                   | 2.466    | 3.234 | 12.6    | 20.0 |
| <b>293512</b> | 2007 <i>GW</i> <sub>29</sub>  | 10 20.1 140°95 1°3/21.9 18   |          |       |         |      | <b>490408</b> | 2009 <i>RV</i> <sub>56</sub> | 10 20.1 350°03 1°6/18.9 17 |          |       |         |      |
| 9 18          | 1 59.84                       | +19 53.5                     | 2.758    | 3.585 | 10.4    | 20.3 | 9 18          | 2 3.33                       | + 6 6.3                    | 1.856    | 2.733 | 12.5    | 20.9 |
| 9 28          | 1 54.69                       | +18 48.0                     | 2.685    | 3.595 | 7.7     | 20.2 | 9 28          | 1 57.76                      | + 6 0.9</                  |          |       |         |      |



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| 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  | 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  |
|---------------|------------------------|-----------------|----------------|----------|---------|------|---------------|------------------------|-----------------|----------------|----------|---------|------|
| <b>22365</b>  | 1993 FQ <sub>43</sub>  |                 | 10 20.1 339°50 | 0°7/20.5 | 18      |      | <b>1437</b>   | Diomedes               |                 | 10 20.1 314°45 | 4°8/29.2 | 18      | R    |
| 9 18          | 2 1.29                 | +12 32.3        | 1.222          | 2.111    | 16.8    | 18.3 | 9 18          | 1 57.54                | +37 0.1         | 4.353          | 5.059    | 8.7     | 15.6 |
| 9 28          | 1 57.25                | +12 34.4        | 1.151          | 2.095    | 12.4    | 17.9 | 9 28          | 1 52.96                | +37 16.9        | 4.262          | 5.057    | 7.5     | 15.5 |
| 10 8          | 1 50.44                | +12 23.0        | 1.099          | 2.080    | 7.2     | 17.6 | 10 8          | 1 47.38                | +37 20.9        | 4.192          | 5.054    | 6.3     | 15.4 |
| 10 18         | 1 41.76                | +12 0.8         | 1.071          | 2.067    | 1.7     | 17.2 | 10 18         | 1 41.19                | +37 11.6        | 4.148          | 5.052    | 5.3     | 15.3 |
| 10 28         | 1 32.60                | +11 33.3        | 1.067          | 2.054    | 4.5     | 17.4 | 10 28         | 1 34.87                | +36 49.6        | 4.131          | 5.049    | 4.8     | 15.3 |
| 11 7          | 1 24.52                | +11 7.8         | 1.087          | 2.043    | 10.1    | 17.7 | 11 7          | 1 28.93                | +36 16.6        | 4.142          | 5.047    | 5.1     | 15.3 |
| 11 17         | 1 18.79                | +10 51.2        | 1.130          | 2.034    | 15.2    | 17.9 | 11 17         | 1 23.80                | +35 35.5        | 4.181          | 5.044    | 6.0     | 15.4 |
| 11 27         | 1 16.26                | +10 49.0        | 1.191          | 2.025    | 19.5    | 18.2 | 11 27         | 1 19.87                | +34 49.8        | 4.246          | 5.042    | 7.2     | 15.5 |
| <b>48163</b>  | 2001 HD <sub>5</sub>   |                 | 10 20.1 166°34 | 1°8/21.4 | 18      |      | <b>151355</b> | 2002 CH <sub>295</sub> |                 | 10 20.1 337°80 | 0°5/19.6 | 18      |      |
| 9 18          | 2 7.86                 | +15 53.8        | 1.597          | 2.453    | 15.3    | 18.7 | 9 18          | 2 1.18                 | +10 51.7        | 2.023          | 2.892    | 12.0    | 20.2 |
| 9 28          | 2 1.35                 | +15 55.9        | 1.530          | 2.455    | 11.4    | 18.5 | 9 28          | 1 56.10                | +10 19.8        | 1.954          | 2.890    | 8.6     | 19.9 |
| 10 8          | 1 52.46                | +15 43.6        | 1.485          | 2.457    | 6.9     | 18.2 | 10 8          | 1 49.33                | +9 39.0         | 1.910          | 2.889    | 4.8     | 19.7 |
| 10 18         | 1 42.09                | +15 18.5        | 1.466          | 2.458    | 2.5     | 18.0 | 10 18         | 1 41.54                | +8 53.1         | 1.892          | 2.888    | 0.9     | 19.4 |
| 10 28         | 1 31.49                | +14 45.0        | 1.474          | 2.460    | 3.8     | 18.1 | 10 28         | 1 33.63                | +8 7.2          | 1.904          | 2.887    | 3.5     | 19.6 |
| 11 7          | 1 21.99                | +14 9.3         | 1.510          | 2.461    | 8.3     | 18.3 | 11 7          | 1 26.48                | +7 26.5         | 1.944          | 2.886    | 7.4     | 19.9 |
| 11 17         | 1 14.60                | +13 38.0        | 1.571          | 2.461    | 12.6    | 18.6 | 11 17         | 1 20.83                | +6 55.4         | 2.009          | 2.885    | 10.9    | 20.1 |
| 11 27         | 1 10.01                | +13 16.6        | 1.654          | 2.462    | 16.2    | 18.8 | 11 27         | 1 17.23                | +6 37.3         | 2.098          | 2.885    | 13.9    | 20.3 |
| <b>128047</b> | 2003 MC <sub>2</sub>   |                 | 10 20.1 86°36  | 5°1/16.2 | 18      |      | <b>307047</b> | 2001 YF <sub>20</sub>  |                 | 10 20.1 237°54 | 2°4/18.2 | 18      |      |
| 9 18          | 2 5.58                 | - 1 20.9        | 1.672          | 2.556    | 13.3    | 19.2 | 9 18          | 2 6.69                 | + 4 53.9        | 1.995          | 2.865    | 12.1    | 20.8 |
| 9 28          | 1 59.23                | - 2 15.8        | 1.633          | 2.574    | 9.7     | 19.1 | 9 28          | 2 0.18                 | + 4 25.8        | 1.914          | 2.851    | 8.7     | 20.6 |
| 10 8          | 1 51.00                | - 3 8.2         | 1.618          | 2.591    | 6.3     | 18.9 | 10 8          | 1 51.71                | + 3 53.5        | 1.857          | 2.836    | 5.0     | 20.3 |
| 10 18         | 1 41.79                | - 3 51.4        | 1.630          | 2.609    | 5.2     | 18.9 | 10 18         | 1 41.98                | + 3 21.3        | 1.829          | 2.821    | 2.4     | 20.1 |
| 10 28         | 1 32.69                | - 4 19.4        | 1.669          | 2.626    | 7.3     | 19.0 | 10 28         | 1 31.97                | + 2 54.1        | 1.830          | 2.805    | 4.9     | 20.3 |
| 11 7          | 1 24.73                | - 4 28.6        | 1.735          | 2.643    | 10.6    | 19.3 | 11 7          | 1 22.70                | + 2 36.4        | 1.860          | 2.788    | 8.7     | 20.5 |
| 11 17         | 1 18.67                | - 4 18.1        | 1.824          | 2.660    | 13.8    | 19.5 | 11 17         | 1 15.05                | + 2 31.6        | 1.915          | 2.771    | 12.4    | 20.7 |
| 11 27         | 1 14.99                | - 3 49.0        | 1.933          | 2.676    | 16.4    | 19.8 | 11 27         | 1 9.67                 | + 2 41.4        | 1.993          | 2.753    | 15.4    | 20.8 |
| <b>359452</b> | 2010 NR <sub>24</sub>  |                 | 10 20.1 123°17 | 0°1/20.1 | 18      |      | <b>473510</b> | 2015 XL <sub>138</sub> |                 | 10 20.1 74°52  | 1°6/18.6 | 18      |      |
| 9 18          | 2 4.32                 | +11 10.8        | 2.230          | 3.088    | 11.4    | 21.1 | 9 18          | 2 2.18                 | + 6 52.5        | 2.160          | 3.032    | 11.2    | 21.1 |
| 9 28          | 1 58.13                | +10 58.5        | 2.167          | 3.098    | 8.2     | 20.9 | 9 28          | 1 56.53                | + 6 18.8        | 2.113          | 3.051    | 7.9     | 20.9 |
| 10 8          | 1 50.36                | +10 38.7        | 2.130          | 3.108    | 4.6     | 20.7 | 10 8          | 1 49.43                | + 5 40.6        | 2.091          | 3.071    | 4.4     | 20.7 |
| 10 18         | 1 41.69                | +10 14.1        | 2.121          | 3.117    | 0.8     | 20.4 | 10 18         | 1 41.54                | + 5 2.0         | 2.097          | 3.090    | 1.7     | 20.6 |
| 10 28         | 1 32.97                | + 9 48.2        | 2.143          | 3.126    | 3.0     | 20.6 | 10 28         | 1 33.70                | + 4 27.6        | 2.132          | 3.110    | 3.9     | 20.8 |
| 11 7          | 1 25.03                | + 9 25.2        | 2.193          | 3.136    | 6.7     | 20.9 | 11 7          | 1 26.69                | + 4 1.3         | 2.196          | 3.129    | 7.3     | 21.0 |
| 11 17         | 1 18.57                | + 9 8.5         | 2.270          | 3.144    | 9.9     | 21.1 | 11 17         | 1 21.14                | + 3 46.0        | 2.286          | 3.148    | 10.4    | 21.2 |
| 11 27         | 1 14.08                | + 9 1.2         | 2.371          | 3.153    | 12.7    | 21.3 | 11 27         | 1 17.48                | + 3 43.4        | 2.399          | 3.167    | 12.9    | 21.5 |
| <b>345148</b> | 2005 SE <sub>108</sub> |                 | 10 20.1 97°18  | 0°3/19.8 | 17      |      | <b>141903</b> | 2002 PE <sub>68</sub>  |                 | 10 20.1 97°47  | 3°0/17.7 | 18      |      |
| 9 18          | 2 3.89                 | +12 53.3        | 1.550          | 2.421    | 14.8    | 20.8 | 9 18          | 2 4.65                 | + 6 37.2        | 1.449          | 2.335    | 14.8    | 20.0 |
| 9 28          | 1 58.33                | +12 1.4         | 1.494          | 2.431    | 10.7    | 20.6 | 9 28          | 1 58.90                | + 5 25.0        | 1.402          | 2.347    | 10.5    | 19.8 |
| 10 8          | 1 50.65                | +10 55.8        | 1.460          | 2.440    | 6.0     | 20.3 | 10 8          | 1 50.97                | + 4 5.3         | 1.377          | 2.359    | 5.9     | 19.5 |
| 10 18         | 1 41.75                | + 9 42.2        | 1.454          | 2.449    | 1.0     | 20.0 | 10 18         | 1 41.83                | + 2 46.2        | 1.379          | 2.371    | 3.0     | 19.4 |
| 10 28         | 1 32.81                | + 8 28.2        | 1.474          | 2.458    | 4.1     | 20.3 | 10 28         | 1 32.72                | + 1 36.6        | 1.408          | 2.382    | 6.1     | 19.6 |
| 11 7          | 1 25.01                | + 7 22.3        | 1.522          | 2.467    | 8.8     | 20.6 | 11 7          | 1 24.83                | + 0 43.9        | 1.463          | 2.394    | 10.4    | 19.9 |
| 11 17         | 1 19.21                | + 6 30.7        | 1.595          | 2.476    | 12.9    | 20.8 | 11 17         | 1 19.05                | + 0 12.3        | 1.541          | 2.405    | 14.4    | 20.2 |
| 11 27         | 1 15.98                | + 5 57.4        | 1.688          | 2.485    | 16.4    | 21.1 | 11 27         | 1 15.91                | + 0 3.2         | 1.640          | 2.416    | 17.6    | 20.4 |
| <b>261787</b> | 2006 BL <sub>153</sub> |                 | 10 20.1 17°37  | 1°3/19.1 | 18      |      | <b>239954</b> | 2001 FG <sub>120</sub> |                 | 10 20.1 117°44 | 0°4/20.5 | 18      |      |
| 9 18          | 2 0.54                 | + 8 44.0        | 1.698          | 2.580    | 13.2    | 19.9 | 9 18          | 2 5.36                 | +12 52.6        | 1.959          | 2.817    | 12.8    | 20.8 |
| 9 28          | 1 55.80                | + 8 14.2        | 1.642          | 2.586    | 9.4     | 19.7 | 9 28          | 1 59.08                | +12 40.3        | 1.898          | 2.827    | 9.3     | 20.6 |
| 10 8          | 1 49.20                | + 7 36.9        | 1.610          | 2.592    | 5.2     | 19.4 | 10 8          | 1 50.99                | +12 18.2        | 1.861          | 2.837    | 5.3     | 20.4 |
| 10 18         | 1 41.50                | + 6 56.6        | 1.603          | 2.599    | 1.4     | 19.2 | 10 18         | 1 41.85                | +11 49.0        | 1.851          | 2.847    | 1.2     | 20.1 |
| 10 28         | 1 33.74                | + 6 19.0        | 1.624          | 2.606    | 4.2     | 19.4 | 10 28         | 1 32.64                | +11 16.7        | 1.871          | 2.856    | 3.2     | 20.3 |
| 11 7          | 1 26.91                | + 5 49.5        | 1.672          | 2.614    | 8.4     | 19.7 | 11 7          | 1 24.35                | +10 46.5        | 1.919          | 2.865    | 7.2     | 20.5 |
| 11 17         | 1 21.81                | + 5 32.2        | 1.744          | 2.623    | 12.1    | 19.9 | 11 17         | 1 17.75                | +10 22.8        | 1.994          | 2.874    | 10.8    | 20.8 |
| 11 27         | 1 18.98                | + 5 29.6        | 1.838          | 2.633    | 15.3    | 20.2 | 11 27         | 1 13.38                | +10 9.1         | 2.092          | 2.882    | 13.8    | 21.0 |
| <b>365715</b> | 2010 VB <sub>172</sub> |                 | 10 20.1 44°23  | 2°3/18.1 | 18      |      | <b>287561</b> | 2003 FQ <sub>18</sub>  |                 | 10 20.1 260°77 | 0°5/20.6 | 17      |      |
| 9 18          | 2 2.64                 | + 4 23.5        | 2.118          | 2.993    | 11.3    | 20.6 | 9 18          | 2 2.04                 | +13 33.7        | 2.071          | 2.930    | 12.2    | 21.3 |
| 9 28          | 1 57.03                | + 3 57.7        | 2.054          | 2.994    | 8.0     | 20.4 | 9 28          | 1 56.76                | +13 11.1        | 1.994          | 2.924    | 8.9     | 21.1 |
| 10 8          | 1 49.79                | + 3 29.0        | 2.015          | 2.995    | 4.6     | 20.2 | 10 8          | 1 49.73                | +12 37.8        | 1.942          | 2.918    | 5.1     | 20.9 |
| 10 18         | 1 41.61                | + 3 1.5         | 2.004          | 2.996    | 2.3     | 20.1 | 10 18         | 1 41.64                | +11 56.6        | 1.917          | 2.912    | 1.1     | 20.6 |
| 10 28         | 1 33.33                | + 2 39.4        | 2.022          | 2.997    | 4.5     | 20.2 | 10 28         | 1 33.35                | +11 11.9        | 1.921          | 2.907    | 3.1     | 20.7 |
| 11 7          | 1 25.81                | + 2 26.5        | 2.068          | 2.997    | 7.9     | 20.4 | 11 7          | 1 25.80                | +10 29.3        | 1.954          | 2.901    | 7.1     | 21.0 |
| 11 17         | 1 19.75                | + 2 25.4        | 2.140          | 2.998    | 11.1    | 20.6 | 11 17         | 1 19.75                | + 9 53.4        | 2.013          | 2.895    | 10.6    | 21.2 |
| 11 27         | 1 15.68                | + 2 37.4        | 2.235          | 2.999    | 13.8    | 20.8 | 11 27         | 1 15.78                | + 9 28.5        | 2.095          | 2.889    | 13.7    | 21.4 |
| <b>223591</b> | 2004 GA <sub>20</sub>  |                 | 10 20.1 124°87 | 0°9/20.9 | 16      |      | <b>287041</b> | 2002 QX <sub>115</sub> |                 | 10 20.1 207°52 | 4°8/15.2 | 18      |      |
| 9 18          | 2 6.59                 | +15 12.2        | 1.804          | 2.657    | 13.9    | 21.4 | 9 18          | 2 1.37                 | - 0 30.4        | 2.017          | 2.900    | 11.4    | 20.6 |
| 9 28          | 2 0.03                 | +14 46.0        | 1.746          | 2.672    | 10.2    | 21.2 | 9 28          | 1 56.19                | - 1 52.6        | 1.956          | 2.897    | 8.3     | 20.4 |
| 10 8          | 1 51.52                | +14 6.5         | 1.712          | 2.686    | 6.0     | 21.0 | 10 8          | 1 49.36                | - 3 15.5        | 1.921          | 2.893    | 5.6     | 20.3 |
| 10 18         | 1 41.91                | +13 17.1        | 1.705          | 2.699    | 1.6     | 20.7 | 10 18         | 1 41.56                | - 4 32.1        | 1.914          | 2.890    | 4.9     | 20.2 |
| 10 28         | 1 32.29                | +12 23.1        | 1.727          | 2.712    | 3.4     | 20.9 | 10 28         | 1 33.66                | - 5 35.4        | 1.935          | 2.886    | 7.0     | 20.4 |
| 11 7          | 1 23.72                | +11 31.2        | 1.777          | 2.724    | 7.6     | 21.2 | 11 7          | 1 26.53                | - 6 20.2        | 1.983          | 2.882    | 10.0    | 20.5 |
| 11 17         | 1 17.04                | +10 47.1        | 1.854          | 2.736    | 11.4    | 21.4 | 11 17         | 1 20.88                | - 6 44.0        | 2.056          | 2.877    | 13.0    | 20.7 |
| 11 27         | 1 12.77                | +10 15.3        | 1.953          | 2.747    | 14.5    | 21.7 | 11 27         | 1 17.25                | - 6 46.4        | 2.149          | 2.873    | 15.5    | 20.9 |
| <b>280082</b> | 2002 CE <sub>286</sub> |                 | 10 20.1 63°91  | 1°8/18.7 | 18      |      | <b>173720</b> | 2001 QZ <sub>182</sub> |                 | 10 20.1 325°23 | 7°3/14.6 | 18      |      |
| 9 18          | 2 3.36                 | + 8 31.3        | 1.548          | 2.       |         |      |               |                        |                 |                |          |         |      |

EPHEMERIDES

10 20.1

10 20.2

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$        | $r$      | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$        | $r$      | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|-----------------|----------|---------|------|---------------|-------------------------------|-----------------|-----------------|----------|---------|------|
| <b>311615</b> | 2006 <i>PP</i> <sub>31</sub>  |                 | 10 20.1 28°96'  | 2°9/25.4 | 18      |      | <b>408574</b> | 2013 <i>LA</i> <sub>7</sub>   |                 | 10 20.1 73°60'  | 8°7/11.1 | 18      |      |
| 9 18          | 1 55.57                       | +26 57.5        | 4.268           | 5.048    | 7.8     | 19.9 | 9 18          | 2 1.87                        | -16 39.0        | 2.208           | 3.068    | 11.4    | 20.1 |
| 9 28          | 1 51.46                       | +26 56.5        | 4.183           | 5.050    | 6.3     | 19.8 | 9 28          | 1 56.31                       | -17 50.7        | 2.181           | 3.082    | 9.7     | 20.0 |
| 10 8          | 1 46.51                       | +26 45.6        | 4.123           | 5.051    | 4.7     | 19.7 | 10 8          | 1 49.32                       | -18 48.6        | 2.178           | 3.095    | 8.7     | 19.9 |
| 10 18         | 1 41.05                       | +26 25.2        | 4.091           | 5.053    | 3.3     | 19.6 | 10 18         | 1 41.57                       | -19 26.7        | 2.200           | 3.109    | 9.0     | 20.0 |
| 10 28         | 1 35.52                       | +25 56.7        | 4.088           | 5.054    | 2.9     | 19.6 | 10 28         | 1 33.91                       | -19 41.0        | 2.248           | 3.122    | 10.2    | 20.1 |
| 11 7          | 1 30.33                       | +25 22.2        | 4.115           | 5.056    | 3.9     | 19.7 | 11 7          | 1 27.10                       | -19 30.5        | 2.320           | 3.136    | 12.0    | 20.2 |
| 11 17         | 1 25.88                       | +24 44.5        | 4.171           | 5.057    | 5.5     | 19.8 | 11 17         | 1 21.76                       | -18 56.7        | 2.413           | 3.149    | 13.8    | 20.4 |
| 11 27         | 1 22.49                       | +24 6.6         | 4.254           | 5.059    | 7.1     | 19.9 | 11 27         | 1 18.30                       | -18 2.5         | 2.524           | 3.162    | 15.3    | 20.6 |
| <b>22197</b>  | 3555 <i>P-L</i>               |                 | 10 20.1 93°82'  | 4°0/22.9 | 18      |      | <b>514813</b> | 2007 <i>TQ</i> <sub>386</sub> |                 | 10 20.1 10°12'  | 1°1/19.4 | 18      |      |
| 9 18          | 2 8.41                        | +21 8.0         | 1.479           | 2.322    | 17.0    | 18.1 | 9 18          | 2 4.20                        | + 8 35.7        | 1.481           | 2.364    | 14.8    | 20.8 |
| 9 28          | 2 1.86                        | +21 18.7        | 1.421           | 2.334    | 13.0    | 17.9 | 9 28          | 1 58.75                       | + 8 25.6        | 1.422           | 2.365    | 10.6    | 20.6 |
| 10 8          | 1 52.77                       | +21 9.1         | 1.384           | 2.345    | 8.7     | 17.6 | 10 8          | 1 51.02                       | + 8 7.8         | 1.385           | 2.367    | 5.9     | 20.3 |
| 10 18         | 1 42.18                       | +20 39.6        | 1.372           | 2.357    | 4.8     | 17.5 | 10 18         | 1 41.91                       | + 7 46.2        | 1.374           | 2.369    | 1.3     | 20.0 |
| 10 28         | 1 31.49                       | +19 54.7        | 1.387           | 2.369    | 4.8     | 17.5 | 10 28         | 1 32.65                       | + 7 26.2        | 1.389           | 2.372    | 4.5     | 20.3 |
| 11 7          | 1 22.09                       | +19 2.0         | 1.428           | 2.380    | 8.5     | 17.7 | 11 7          | 1 24.48                       | + 7 13.1        | 1.431           | 2.376    | 9.2     | 20.6 |
| 11 17         | 1 15.05                       | +18 9.9         | 1.494           | 2.391    | 12.6    | 18.0 | 11 17         | 1 18.38                       | + 7 11.0        | 1.496           | 2.381    | 13.4    | 20.8 |
| 11 27         | 1 11.00                       | +17 26.3        | 1.582           | 2.402    | 16.2    | 18.3 | 11 27         | 1 14.97                       | + 7 22.6        | 1.582           | 2.385    | 17.0    | 21.1 |
| <b>90319</b>  | 2003 <i>FO</i> <sub>50</sub>  |                 | 10 20.1 45°19'  | 1°5/21.2 | 18      |      | <b>186647</b> | 2003 <i>RB</i> <sub>11</sub>  |                 | 10 20.1 49°07'  | 1°1/19.1 | 18      |      |
| 9 18          | 2 4.56                        | +15 49.8        | 1.282           | 2.156    | 17.2    | 18.8 | 9 18          | 2 1.40                        | +11 11.2        | 1.751           | 2.625    | 13.3    | 19.7 |
| 9 28          | 1 59.11                       | +15 30.5        | 1.238           | 2.173    | 12.6    | 18.6 | 9 28          | 1 56.15                       | +10 4.2         | 1.718           | 2.657    | 9.4     | 19.5 |
| 10 8          | 1 51.19                       | +14 53.8        | 1.214           | 2.190    | 7.5     | 18.4 | 10 8          | 1 49.26                       | + 8 48.3        | 1.709           | 2.690    | 5.1     | 19.3 |
| 10 18         | 1 41.89                       | +14 3.8         | 1.214           | 2.208    | 2.3     | 18.1 | 10 18         | 1 41.56                       | + 7 29.5        | 1.727           | 2.722    | 1.2     | 19.1 |
| 10 28         | 1 32.65                       | +13 7.7         | 1.240           | 2.226    | 4.0     | 18.3 | 10 28         | 1 34.04                       | + 6 15.1        | 1.773           | 2.755    | 4.0     | 19.4 |
| 11 7          | 1 24.81                       | +12 14.2        | 1.291           | 2.245    | 9.0     | 18.6 | 11 7          | 1 27.58                       | + 5 11.8        | 1.848           | 2.788    | 7.9     | 19.7 |
| 11 17         | 1 19.35                       | +11 30.8        | 1.366           | 2.264    | 13.5    | 18.9 | 11 17         | 1 22.84                       | + 4 23.8        | 1.948           | 2.820    | 11.4    | 20.0 |
| 11 27         | 1 16.82                       | +11 2.7         | 1.462           | 2.284    | 17.2    | 19.2 | 11 27         | 1 20.23                       | + 3 53.6        | 2.070           | 2.853    | 14.2    | 20.3 |
| <b>521887</b> | 2015 <i>TN</i> <sub>382</sub> |                 | 10 20.1 123°21' | 0°3/20.5 | 18      |      | <b>487341</b> | 2014 <i>QN</i> <sub>199</sub> |                 | 10 20.1 59°09'  | 6°8/27.1 | 17      |      |
| 9 18          | 1 59.35                       | +15 26.6        | 2.244           | 3.098    | 11.5    | 21.4 | 9 18          | 2 4.77                        | +32 16.5        | 2.208           | 2.976    | 14.5    | 21.2 |
| 9 28          | 1 54.63                       | +14 22.0        | 2.173           | 3.101    | 8.4     | 21.2 | 9 28          | 1 58.90                       | +32 50.2        | 2.133           | 2.981    | 12.2    | 21.0 |
| 10 8          | 1 48.45                       | +13 4.7         | 2.129           | 3.104    | 4.8     | 21.0 | 10 8          | 1 51.04                       | +33 3.1         | 2.080           | 2.986    | 9.7     | 20.9 |
| 10 18         | 1 41.41                       | +11 38.9        | 2.112           | 3.108    | 1.0     | 20.7 | 10 18         | 1 41.94                       | +32 53.2        | 2.050           | 2.991    | 7.6     | 20.8 |
| 10 28         | 1 34.31                       | +10 10.7        | 2.126           | 3.111    | 2.9     | 20.9 | 10 28         | 1 32.60                       | +32 21.6        | 2.047           | 2.996    | 6.8     | 20.7 |
| 11 7          | 1 27.93                       | + 8 46.7        | 2.169           | 3.114    | 6.6     | 21.1 | 11 7          | 1 24.09                       | +31 32.7        | 2.072           | 3.001    | 7.9     | 20.8 |
| 11 17         | 1 22.91                       | + 7 32.9        | 2.239           | 3.116    | 9.9     | 21.4 | 11 17         | 1 17.30                       | +30 32.9        | 2.122           | 3.006    | 10.1    | 21.0 |
| 11 27         | 1 19.71                       | + 6 33.5        | 2.334           | 3.119    | 12.7    | 21.6 | 11 27         | 1 12.84                       | +29 30.1        | 2.197           | 3.012    | 12.4    | 21.1 |
| <b>492830</b> | 2014 <i>QJ</i> <sub>301</sub> |                 | 10 20.1 19°71'  | 6°8/24.5 | 17      |      | <b>92002</b>  | 1999 <i>VX</i> <sub>147</sub> |                 | 10 20.1 308°09' | 1°3/21.4 | 18      |      |
| 9 18          | 2 12.19                       | +26 35.6        | 1.935           | 2.731    | 15.3    | 20.8 | 9 18          | 2 1.87                        | +15 55.3        | 2.135           | 2.985    | 12.2    | 19.7 |
| 9 28          | 2 4.52                        | +28 3.8         | 1.864           | 2.736    | 12.5    | 20.6 | 9 28          | 1 56.60                       | +15 41.5        | 2.060           | 2.984    | 9.0     | 19.4 |
| 10 8          | 1 54.36                       | +29 15.1        | 1.816           | 2.742    | 9.6     | 20.4 | 10 8          | 1 49.66                       | +15 16.0        | 2.010           | 2.982    | 5.4     | 19.2 |
| 10 18         | 1 42.51                       | +30 5.1         | 1.793           | 2.748    | 7.3     | 20.3 | 10 18         | 1 41.68                       | +14 41.0        | 1.988           | 2.981    | 1.9     | 19.0 |
| 10 28         | 1 30.21                       | +30 32.5        | 1.799           | 2.755    | 7.0     | 20.3 | 10 28         | 1 33.55                       | +14 0.2         | 1.994           | 2.979    | 2.9     | 19.1 |
| 11 7          | 1 18.80                       | +30 39.7        | 1.833           | 2.762    | 8.8     | 20.4 | 11 7          | 1 26.14                       | +13 18.8        | 2.028           | 2.978    | 6.6     | 19.3 |
| 11 17         | 1 9.44                        | +30 32.5        | 1.893           | 2.770    | 11.4    | 20.6 | 11 17         | 1 20.22                       | +12 41.7        | 2.090           | 2.977    | 10.1    | 19.5 |
| 11 27         | 1 2.90                        | +30 18.4        | 1.976           | 2.778    | 14.1    | 20.8 | 11 27         | 1 16.31                       | +12 13.3        | 2.175           | 2.975    | 13.0    | 19.7 |
| <b>56534</b>  | 2000 <i>HH</i> <sub>52</sub>  |                 | 10 20.1 265°59' | 1°3/19.2 | 18      |      | <b>181233</b> | 2005 <i>TB</i> <sub>101</sub> |                 | 10 20.1 110°22' | 1°3/18.9 | 18      |      |
| 9 18          | 2 6.21                        | + 8 31.1        | 1.670           | 2.544    | 13.8    | 19.6 | 9 18          | 2 2.38                        | + 8 18.6        | 2.065           | 2.936    | 11.7    | 20.3 |
| 9 28          | 2 0.22                        | + 8 7.0         | 1.587           | 2.526    | 10.0    | 19.4 | 9 28          | 1 56.89                       | + 7 46.6        | 2.002           | 2.940    | 8.3     | 20.1 |
| 10 8          | 1 51.92                       | + 7 34.5        | 1.528           | 2.509    | 5.6     | 19.1 | 10 8          | 1 49.77                       | + 7 8.4         | 1.964           | 2.944    | 4.6     | 19.9 |
| 10 18         | 1 42.07                       | + 6 57.6        | 1.495           | 2.491    | 1.5     | 18.8 | 10 18         | 1 41.70                       | + 6 27.7        | 1.954           | 2.948    | 1.3     | 19.7 |
| 10 28         | 1 31.81                       | + 6 21.9        | 1.491           | 2.472    | 4.6     | 18.9 | 10 28         | 1 33.54                       | + 5 49.5        | 1.972           | 2.953    | 3.9     | 19.9 |
| 11 7          | 1 22.39                       | + 5 53.5        | 1.513           | 2.453    | 9.3     | 19.2 | 11 7          | 1 26.17                       | + 5 18.4        | 2.019           | 2.957    | 7.6     | 20.1 |
| 11 17         | 1 14.86                       | + 5 37.5        | 1.561           | 2.434    | 13.6    | 19.4 | 11 17         | 1 20.31                       | + 4 58.1        | 2.093           | 2.961    | 10.9    | 20.3 |
| 11 27         | 1 9.98                        | + 5 37.0        | 1.629           | 2.415    | 17.3    | 19.6 | 11 27         | 1 16.46                       | + 4 50.9        | 2.188           | 2.965    | 13.7    | 20.5 |
| <b>483668</b> | 2005 <i>GH</i> <sub>97</sub>  |                 | 10 20.1 138°52' | 3°0/24.9 | 17      |      | <b>48782</b>  | Fierz                         |                 | 10 20.1 98°84'  | 3°3/16.9 | 18      |      |
| 9 18          | 2 1.22                        | +26 14.9        | 3.840           | 4.619    | 8.6     | 23.3 | 9 18          | 2 2.04                        | + 3 58.0        | 1.937           | 2.817    | 11.9    | 19.1 |
| 9 28          | 1 55.49                       | +26 16.4        | 3.766           | 4.634    | 6.9     | 23.2 | 9 28          | 1 56.61                       | + 2 45.5        | 1.890           | 2.832    | 8.4     | 18.9 |
| 10 8          | 1 48.77                       | +26 6.9         | 3.718           | 4.649    | 5.0     | 23.1 | 10 8          | 1 49.57                       | + 1 29.9        | 1.868           | 2.847    | 5.0     | 18.7 |
| 10 18         | 1 41.47                       | +25 46.8        | 3.698           | 4.663    | 3.4     | 23.0 | 10 18         | 1 41.66                       | + 0 17.4        | 1.874           | 2.862    | 3.3     | 18.7 |
| 10 28         | 1 34.13                       | +25 17.7        | 3.709           | 4.676    | 3.1     | 23.0 | 10 28         | 1 33.78                       | - 0 45.2        | 1.909           | 2.876    | 5.6     | 18.9 |
| 11 7          | 1 27.26                       | +24 42.1        | 3.750           | 4.689    | 4.3     | 23.1 | 11 7          | 1 26.80                       | - 1 32.7        | 1.972           | 2.890    | 9.0     | 19.1 |
| 11 17         | 1 21.31                       | +24 3.4         | 3.821           | 4.702    | 6.1     | 23.2 | 11 17         | 1 21.40                       | - 2 2.0         | 2.059           | 2.904    | 12.1    | 19.3 |
| 11 27         | 1 16.64                       | +23 24.8        | 3.919           | 4.714    | 7.8     | 23.4 | 11 27         | 1 18.03                       | - 2 12.4        | 2.168           | 2.917    | 14.7    | 19.5 |
| <b>512905</b> | 2016 <i>WQ</i> <sub>49</sub>  |                 | 10 20.1 70°77'  | 5°7/16.7 | 18      |      | <b>148200</b> | 2000 <i>CH</i> <sub>69</sub>  |                 | 10 20.1 304°81' | 2°0/21.4 | 18      |      |
| 9 18          | 2 8.99                        | - 4 15.7        | 1.624           | 2.504    | 13.9    | 20.5 | 9 18          | 2 4.13                        | +16 22.4        | 1.369           | 2.239    | 16.6    | 20.0 |
| 9 28          | 2 1.78                        | - 4 38.2        | 1.581           | 2.517    | 10.3    | 20.4 | 9 28          | 1 59.20                       | +16 15.0        | 1.291           | 2.223    | 12.5    | 19.7 |
| 10 8          | 1 52.51                       | - 4 54.6        | 1.561           | 2.530    | 7.0     | 20.2 | 10 8          | 1 51.56                       | +15 49.8        | 1.234           | 2.208    | 7.7     | 19.4 |
| 10 18         | 1 42.14                       | - 4 59.5        | 1.568           | 2.544    | 5.7     | 20.2 | 10 18         | 1 42.08                       | +15 8.7         | 1.200           | 2.193    | 2.8     | 19.1 |
| 10 28         | 1 31.86                       | - 4 48.5        | 1.602           | 2.557    | 7.7     | 20.3 | 10 28         | 1 32.11                       | +14 17.0        | 1.192           | 2.179    | 4.2     | 19.2 |
| 11 7          | 1 22.81                       | - 4 19.8        | 1.662           | 2.570    | 11.0    | 20.5 | 11 7          | 1 23.16                       | +13 23.2        | 1.210           | 2.164    | 9.4     | 19.4 |
| 11 17         | 1 15.83                       | - 3 33.9        | 1.746           | 2.584    | 14.2    | 20.8 | 11 17         | 1 16.46                       | +12 35.7        | 1.251           | 2.151    | 14.4    | 19.7 |
| 11 27         | 1 11.43                       | - 2 32.7        | 1.851           | 2.597    | 16.9    | 21.0 | 11 27         | 1 12.86                       | +12 2.1         | 1.312           | 2.137    | 18.6    | 19.9 |
| <b>138474</b> | 2000 <i>JP</i> <sub>79</sub>  |                 | 10 20.1 266°37' | 2°0/18.6 | 18      |      | <b>65228</b>  | 2002 <i>EH</i> <sub>58</sub>  |                 | 10 20.2 337°41' | 2°1/16.3 | 18      |      |

EPHEMERIDES

10 20.2

10 20.2

| 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$ | $r$     | $\beta$  | $V$  | 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$ | $r$     | $\beta$  | $V$  |
|---------------|------------------------|-----------------|----------|---------|----------|------|---------------|------------------------|-----------------|----------|---------|----------|------|
| <b>381031</b> | 2006 VJ <sub>13</sub>  |                 | 10 20.2  | 9°36'   | 4.7/18.2 | 18   | <b>183328</b> | 2002 VY <sub>55</sub>  |                 | 10 20.2  | 30°91'  | 1°0/19.6 | 18   |
| 9 18          | 2 3.82                 | + 1 21.9        | 0.869    | 1.785   | 19.1     | 19.8 | 9 18          | 2 5.18                 | + 9 25.3        | 1.055    | 1.952   | 18.2     | 19.4 |
| 9 28          | 1 59.38                | + 1 20.5        | 0.829    | 1.787   | 13.8     | 19.5 | 9 28          | 1 59.90                | + 9 11.6        | 1.016    | 1.965   | 13.0     | 19.2 |
| 10 8          | 1 51.70                | + 1 20.4        | 0.807    | 1.791   | 8.2      | 19.3 | 10 8          | 1 51.81                | + 8 47.1        | 0.996    | 1.980   | 7.2      | 18.9 |
| 10 18         | 1 42.08                | + 1 28.4        | 0.806    | 1.797   | 4.7      | 19.1 | 10 18         | 1 42.12                | + 8 17.1        | 1.000    | 1.995   | 1.4      | 18.6 |
| 10 28         | 1 32.39                | + 1 50.7        | 0.826    | 1.805   | 8.0      | 19.3 | 10 28         | 1 32.49                | + 7 49.2        | 1.027    | 2.012   | 5.2      | 18.9 |
| 11 7          | 1 24.45                | + 2 30.6        | 0.868    | 1.815   | 13.3     | 19.7 | 11 7          | 1 24.47                | + 7 30.7        | 1.078    | 2.029   | 10.8     | 19.3 |
| 11 17         | 1 19.51                | + 3 28.1        | 0.929    | 1.827   | 18.3     | 20.0 | 11 17         | 1 19.16                | + 7 26.4        | 1.150    | 2.047   | 15.6     | 19.6 |
| 11 27         | 1 18.22                | + 4 41.8        | 1.007    | 1.841   | 22.3     | 20.3 | 11 27         | 1 17.11                | + 7 38.9        | 1.242    | 2.067   | 19.5     | 19.9 |
| <b>60671</b>  | 2000 GP <sub>9</sub>   |                 | 10 20.2  | 71°23'  | 3.4/16.9 | 18   | <b>346422</b> | 2008 SP <sub>196</sub> |                 | 10 20.2  | 62°92'  | 1°1/19.4 | 18   |
| 9 18          | 2 1.11                 | + 4 54.3        | 1.754    | 2.639   | 12.7     | 18.7 | 9 18          | 2 6.22                 | + 8 49.1        | 1.529    | 2.406   | 14.7     | 21.0 |
| 9 28          | 1 56.09                | + 3 30.1        | 1.708    | 2.653   | 9.0      | 18.5 | 9 28          | 2 0.06                 | + 8 32.2        | 1.476    | 2.417   | 10.5     | 20.7 |
| 10 8          | 1 49.33                | + 2 1.3         | 1.688    | 2.668   | 5.2      | 18.3 | 10 8          | 1 51.72                | + 8 7.4         | 1.447    | 2.428   | 5.8      | 20.5 |
| 10 18         | 1 41.63                | + 0 35.5        | 1.694    | 2.683   | 3.5      | 18.2 | 10 18         | 1 42.11                | + 7 39.0        | 1.443    | 2.439   | 1.3      | 20.2 |
| 10 28         | 1 33.97                | - 0 39.5        | 1.729    | 2.697   | 6.0      | 18.4 | 10 28         | 1 32.46                | + 7 12.3        | 1.467    | 2.450   | 4.4      | 20.5 |
| 11 7          | 1 27.28                | - 1 37.4        | 1.791    | 2.712   | 9.5      | 18.7 | 11 7          | 1 23.98                | + 6 53.0        | 1.517    | 2.461   | 9.0      | 20.8 |
| 11 17         | 1 22.27                | - 2 14.7        | 1.877    | 2.726   | 12.9     | 18.9 | 11 17         | 1 17.59                | + 6 45.1        | 1.592    | 2.472   | 13.1     | 21.0 |
| 11 27         | 1 19.42                | - 2 30.6        | 1.984    | 2.741   | 15.6     | 19.1 | 11 27         | 1 13.85                | + 6 51.0        | 1.689    | 2.484   | 16.4     | 21.3 |
| <b>47684</b>  | 2000 CT <sub>83</sub>  |                 | 10 20.2  | 193°09' | 2°6/17.1 | 18   | <b>154959</b> | 2004 TR <sub>137</sub> |                 | 10 20.2  | 37°07'  | 1°4/19.0 | 18   |
| 9 18          | 1 59.69                | + 3 10.4        | 2.674    | 3.547   | 9.3      | 19.1 | 9 18          | 2 1.25                 | + 8 44.2        | 1.764    | 2.643   | 13.0     | 19.6 |
| 9 28          | 1 54.69                | + 2 21.5        | 2.607    | 3.546   | 6.6      | 18.9 | 9 28          | 1 56.25                | + 8 8.0         | 1.714    | 2.655   | 9.2      | 19.4 |
| 10 8          | 1 48.45                | + 1 30.3        | 2.566    | 3.544   | 3.9      | 18.8 | 10 8          | 1 49.47                | + 7 24.6        | 1.687    | 2.668   | 5.1      | 19.2 |
| 10 18         | 1 41.49                | + 0 41.0        | 2.555    | 3.542   | 2.6      | 18.7 | 10 18         | 1 41.70                | + 6 38.6        | 1.686    | 2.681   | 1.4      | 19.0 |
| 10 28         | 1 34.44                | - 0 2.2         | 2.574    | 3.540   | 4.4      | 18.8 | 10 28         | 1 33.92                | + 5 55.8        | 1.714    | 2.695   | 4.2      | 19.2 |
| 11 7          | 1 27.95                | - 0 35.6        | 2.621    | 3.538   | 7.1      | 19.0 | 11 7          | 1 27.08                | + 5 21.7        | 1.769    | 2.709   | 8.2      | 19.5 |
| 11 17         | 1 22.59                | - 0 56.6        | 2.695    | 3.535   | 9.7      | 19.1 | 11 17         | 1 21.94                | + 5 0.1         | 1.848    | 2.724   | 11.8     | 19.7 |
| 11 27         | 1 18.76                | - 1 4.0         | 2.792    | 3.532   | 11.9     | 19.3 | 11 27         | 1 18.99                | + 4 53.4        | 1.950    | 2.739   | 14.7     | 20.0 |
| <b>226984</b> | 2004 XS <sub>31</sub>  |                 | 10 20.2  | 284°99' | 1°5/18.7 | 18   | <b>513141</b> | 2002 EH <sub>13</sub>  |                 | 10 20.2  | 165°99' | 9°2/28.5 | 18   |
| 9 18          | 2 0.82                 | + 7 18.4        | 2.260    | 3.131   | 10.8     | 20.5 | 9 18          | 2 16.72                | +38 55.3        | 2.366    | 3.066   | 15.4     | 22.1 |
| 9 28          | 1 55.79                | + 6 46.9        | 2.181    | 3.119   | 7.7      | 20.3 | 9 28          | 2 7.86                 | +40 14.4        | 2.285    | 3.072   | 13.5     | 22.0 |
| 10 8          | 1 49.20                | + 6 10.0        | 2.127    | 3.108   | 4.3      | 20.1 | 10 8          | 1 56.35                | +41 11.1        | 2.226    | 3.076   | 11.5     | 21.9 |
| 10 18         | 1 41.64                | + 5 31.1        | 2.102    | 3.096   | 1.5      | 19.9 | 10 18         | 1 43.01                | +41 40.2        | 2.191    | 3.081   | 9.9      | 21.8 |
| 10 28         | 1 33.89                | + 4 54.9        | 2.106    | 3.084   | 3.9      | 20.0 | 10 28         | 1 29.12                | +41 39.8        | 2.183    | 3.084   | 9.2      | 21.8 |
| 11 7          | 1 26.75                | + 4 25.6        | 2.138    | 3.072   | 7.4      | 20.2 | 11 7          | 1 16.09                | +41 12.4        | 2.202    | 3.087   | 9.8      | 21.8 |
| 11 17         | 1 20.94                | + 4 6.8         | 2.196    | 3.061   | 10.6     | 20.4 | 11 17         | 1 5.14                 | +40 24.7        | 2.246    | 3.089   | 11.3     | 21.9 |
| 11 27         | 1 16.98                | + 4 0.9         | 2.278    | 3.049   | 13.4     | 20.6 | 11 27         | 0 57.10                | +39 25.7        | 2.315    | 3.091   | 13.1     | 22.0 |
| <b>447734</b> | 2007 FU <sub>17</sub>  |                 | 10 20.2  | 191°09' | 0°1/20.4 | 18   | <b>460105</b> | 2014 PO <sub>9</sub>   |                 | 10 20.2  | 339°62' | 2°0/18.5 | 17   |
| 9 18          | 1 59.64                | +14 23.0        | 2.948    | 3.794   | 9.3      | 21.8 | 9 18          | 2 0.48                 | + 6 52.4        | 1.820    | 2.701   | 12.5     | 20.8 |
| 9 28          | 1 54.59                | +13 27.9        | 2.868    | 3.792   | 6.7      | 21.6 | 9 28          | 1 55.83                | + 6 17.0        | 1.751    | 2.694   | 8.9      | 20.6 |
| 10 8          | 1 48.38                | +12 23.5        | 2.815    | 3.790   | 3.8      | 21.4 | 10 8          | 1 49.34                | + 5 35.6        | 1.706    | 2.687   | 5.0      | 20.3 |
| 10 18         | 1 41.48                | +11 12.9        | 2.792    | 3.787   | 0.8      | 21.1 | 10 18         | 1 41.71                | + 4 52.6        | 1.687    | 2.681   | 2.0      | 20.1 |
| 10 28         | 1 34.51                | +10 0.2         | 2.800    | 3.784   | 2.4      | 21.3 | 10 28         | 1 33.90                | + 4 13.7        | 1.696    | 2.675   | 4.6      | 20.3 |
| 11 7          | 1 28.06                | + 8 50.3        | 2.839    | 3.780   | 5.4      | 21.5 | 11 7          | 1 26.89                | + 3 44.4        | 1.732    | 2.669   | 8.6      | 20.5 |
| 11 17         | 1 22.67                | + 7 47.4        | 2.907    | 3.776   | 8.2      | 21.7 | 11 17         | 1 21.48                | + 3 28.5        | 1.793    | 2.664   | 12.3     | 20.7 |
| 11 27         | 1 18.73                | + 6 55.0        | 3.000    | 3.771   | 10.5     | 21.8 | 11 27         | 1 18.26                | + 3 28.3        | 1.876    | 2.660   | 15.4     | 20.9 |
| <b>210962</b> | 2001 UZ <sub>140</sub> |                 | 10 20.2  | 307°98' | 0°8/19.7 | 18   | <b>20489</b>  | 1999 OJ <sub>2</sub>   |                 | 10 20.2  | 244°62' | 5°2/25.3 | 18   |
| 9 18          | 2 6.45                 | +10 20.7        | 1.222    | 2.107   | 17.0     | 20.6 | 9 18          | 2 3.58                 | +28 5.5         | 1.950    | 2.752   | 15.0     | 17.4 |
| 9 28          | 2 0.91                 | + 9 59.8        | 1.157    | 2.102   | 12.4     | 20.3 | 9 28          | 1 58.22                | +27 54.8        | 1.863    | 2.743   | 12.2     | 17.2 |
| 10 8          | 1 52.51                | + 9 26.6        | 1.114    | 2.096   | 7.0      | 20.0 | 10 8          | 1 50.78                | +27 21.0        | 1.798    | 2.735   | 9.0      | 17.0 |
| 10 18         | 1 42.27                | + 8 45.7        | 1.094    | 2.090   | 1.3      | 19.6 | 10 18         | 1 41.99                | +26 24.0        | 1.757    | 2.726   | 6.1      | 16.8 |
| 10 28         | 1 31.68                | + 8 4.4         | 1.100    | 2.085   | 5.0      | 19.8 | 10 28         | 1 32.93                | +25 7.0         | 1.744    | 2.716   | 5.4      | 16.7 |
| 11 7          | 1 22.36                | + 7 31.0        | 1.131    | 2.080   | 10.7     | 20.1 | 11 7          | 1 24.72                | +23 36.9        | 1.759    | 2.707   | 7.6      | 16.8 |
| 11 17         | 1 15.56                | + 7 11.7        | 1.184    | 2.075   | 15.7     | 20.4 | 11 17         | 1 18.30                | +22 2.8         | 1.801    | 2.697   | 10.8     | 17.0 |
| 11 27         | 1 12.05                | + 7 10.7        | 1.256    | 2.070   | 19.9     | 20.7 | 11 27         | 1 14.32                | +20 33.7        | 1.866    | 2.687   | 14.0     | 17.2 |
| <b>245731</b> | 2006 DR <sub>54</sub>  |                 | 10 20.2  | 56°20'  | 3°7/17.7 | 18   | <b>286731</b> | 2002 GW <sub>119</sub> |                 | 10 20.2  | 311°87' | 3°8/16.9 | 18   |
| 9 18          | 2 5.95                 | + 6 38.1        | 1.049    | 1.950   | 18.0     | 19.5 | 9 18          | 2 3.00                 | + 0 12.5        | 2.031    | 2.910   | 11.5     | 19.9 |
| 9 28          | 2 0.18                 | + 5 19.1        | 1.022    | 1.974   | 12.7     | 19.3 | 9 28          | 1 57.43                | - 0 19.0        | 1.965    | 2.905   | 8.3      | 19.7 |
| 10 8          | 1 51.79                | + 3 53.1        | 1.015    | 1.998   | 7.1      | 19.1 | 10 8          | 1 50.16                | - 0 50.1        | 1.925    | 2.900   | 5.2      | 19.5 |
| 10 18         | 1 42.07                | + 2 30.5        | 1.031    | 2.023   | 3.7      | 18.9 | 10 18         | 1 41.87                | - 1 16.3        | 1.911    | 2.895   | 3.8      | 19.4 |
| 10 28         | 1 32.66                | + 1 22.4        | 1.072    | 2.048   | 7.2      | 19.2 | 10 28         | 1 33.44                | - 1 32.6        | 1.926    | 2.891   | 5.8      | 19.5 |
| 11 7          | 1 24.98                | + 0 37.0        | 1.137    | 2.074   | 12.1     | 19.6 | 11 7          | 1 25.77                | - 1 35.7        | 1.969    | 2.886   | 9.0      | 19.7 |
| 11 17         | 1 19.96                | + 0 17.4        | 1.223    | 2.099   | 16.4     | 19.9 | 11 17         | 1 19.62                | - 1 23.8        | 2.037    | 2.881   | 12.2     | 19.9 |
| 11 27         | 1 18.05                | + 0 23.1        | 1.327    | 2.125   | 19.9     | 20.2 | 11 27         | 1 15.53                | - 0 56.5        | 2.126    | 2.877   | 14.9     | 20.1 |
| <b>93796</b>  | 2000 WG <sub>43</sub>  |                 | 10 20.2  | 266°79' | 5°4/15.2 | 18   | <b>366046</b> | 2012 CR <sub>7</sub>   |                 | 10 20.2  | 95°76'  | 3°9/24.4 | 18   |
| 9 18          | 2 2.49                 | - 4 39.9        | 2.117    | 2.996   | 11.1     | 19.2 | 9 18          | 2 3.24                 | +24 48.4        | 2.341    | 3.148   | 12.6     | 20.7 |
| 9 28          | 1 56.97                | - 5 28.5        | 2.057    | 2.992   | 8.4      | 19.0 | 9 28          | 1 57.48                | +24 48.0        | 2.275    | 3.163   | 9.9      | 20.5 |
| 10 8          | 1 49.84                | - 6 13.3        | 2.022    | 2.987   | 6.0      | 18.9 | 10 8          | 1 50.13                | +24 31.3        | 2.233    | 3.178   | 7.0      | 20.4 |
| 10 18         | 1 41.76                | - 6 48.6        | 2.013    | 2.982   | 5.5      | 18.8 | 10 18         | 1 41.86                | +23 58.9        | 2.218    | 3.192   | 4.5      | 20.2 |
| 10 28         | 1 33.57                | - 7 9.6         | 2.033    | 2.977   | 7.2      | 18.9 | 10 28         | 1 33.52                | +23 13.8        | 2.231    | 3.206   | 4.1      | 20.2 |
| 11 7          | 1 26.14                | - 7 12.9        | 2.080    | 2.972   | 9.9      | 19.1 | 11 7          | 1 25.98                | +22 20.9        | 2.273    | 3.220   | 6.2      | 20.4 |
| 11 17         | 1 20.16                | - 6 57.7        | 2.150    | 2.967   | 12.7     | 19.3 | 11 17         | 1 19.92                | +21 25.8        | 2.343    | 3.234   | 8.9      | 20.6 |
| 11 27         | 1 16.15                | - 6 24.7        | 2.242    | 2.962   | 15.0     | 19.4 | 11 27         | 1 15.85                | +20 34.4        | 2.437    | 3.247   | 11.5     | 20.8 |
| <b>441243</b> | 2007 VJ <sub>233</sub> |                 | 10 20.2  | 29°21'  | 1°1/19.4 | 16   | <b>273589</b> | 2007 CX <sub>46</sub>  |                 | 10 20.2  | 276°78' | 1°0/19.3 | 18   |
| 9 18          | 2 3.05                 | + 9 30.3        | 1.       |         |          |      |               |                        |                 |          |         |          |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$            | $\Delta$ | $r$   | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$              | $\Delta$ | $r$   | $\beta$ | $V$  |
|---------------|-------------------------------|----------------------------|----------|-------|---------|------|---------------|-------------------------------|------------------------------|----------|-------|---------|------|
| <b>488657</b> | 2003 <i>SM</i> <sub>240</sub> | 10 20.2 323°04 0°6/19.5 18 |          |       |         |      | <b>370882</b> | 2005 <i>EC</i> <sub>158</sub> | 10 20.2 136°95 2°0/18.6 17   |          |       |         |      |
| 9 18          | 1 58.03                       | +12 16.4                   | 1.875    | 2.748 | 12.6    | 20.7 | 9 18          | 2 4.44                        | +9 22.1                      | 1.457    | 2.338 | 15.0    | 21.2 |
| 9 28          | 1 54.13                       | +11 18.1                   | 1.792    | 2.731 | 9.1     | 20.5 | 9 28          | 1 58.96                       | +8 15.3                      | 1.399    | 2.342 | 10.7    | 21.0 |
| 10 8          | 1 48.44                       | +10 6.9                    | 1.734    | 2.714 | 5.1     | 20.2 | 10 8          | 1 51.21                       | +6 57.1                      | 1.364    | 2.346 | 5.9     | 20.7 |
| 10 18         | 1 41.59                       | +8 47.5                    | 1.702    | 2.698 | 0.9     | 19.9 | 10 18         | 1 42.11                       | +5 34.6                      | 1.355    | 2.349 | 2.0     | 20.5 |
| 10 28         | 1 34.51                       | +7 26.8                    | 1.699    | 2.682 | 3.8     | 20.0 | 10 28         | 1 32.92                       | +4 17.0                      | 1.373    | 2.352 | 5.3     | 20.7 |
| 11 7          | 1 28.12                       | +6 12.4                    | 1.723    | 2.667 | 8.1     | 20.3 | 11 7          | 1 24.87                       | +3 12.9                      | 1.417    | 2.355 | 10.0    | 21.0 |
| 11 17         | 1 23.24                       | +5 10.8                    | 1.773    | 2.652 | 12.0    | 20.5 | 11 17         | 1 18.91                       | +2 28.1                      | 1.486    | 2.358 | 14.3    | 21.2 |
| 11 27         | 1 20.48                       | +4 26.7                    | 1.844    | 2.638 | 15.3    | 20.7 | 11 27         | 1 15.65                       | +2 5.6                       | 1.574    | 2.361 | 17.8    | 21.5 |
| <b>198417</b> | 2004 <i>VF</i> <sub>71</sub>  | 10 20.2 346°34 5°9/15.2 18 |          |       |         |      | <b>430495</b> | 2001 <i>TF</i> <sub>256</sub> | 10 20.2 36°78 8°8/16.0 18    |          |       |         |      |
| 9 18          | 2 1.75                        | -0 52.6                    | 1.513    | 2.407 | 13.8    | 19.5 | 9 18          | 2 11.18                       | -9 52.2                      | 1.309    | 2.192 | 16.3    | 19.8 |
| 9 28          | 1 56.94                       | -2 16.3                    | 1.459    | 2.405 | 10.1    | 19.3 | 9 28          | 2 3.80                        | -10 16.1                     | 1.269    | 2.200 | 12.7    | 19.6 |
| 10 8          | 1 50.03                       | -3 40.1                    | 1.429    | 2.403 | 6.9     | 19.1 | 10 8          | 1 53.88                       | -10 25.9                     | 1.250    | 2.209 | 9.7     | 19.4 |
| 10 18         | 1 41.87                       | -4 54.9                    | 1.424    | 2.401 | 6.1     | 19.0 | 10 18         | 1 42.58                       | -10 14.5                     | 1.256    | 2.218 | 8.8     | 19.4 |
| 10 28         | 1 33.60                       | -5 52.0                    | 1.446    | 2.400 | 8.5     | 19.2 | 10 28         | 1 31.39                       | -9 37.3                      | 1.286    | 2.228 | 10.7    | 19.6 |
| 11 7          | 1 26.34                       | -6 25.3                    | 1.492    | 2.398 | 12.1    | 19.4 | 11 7          | 1 21.74                       | -8 34.5                      | 1.340    | 2.238 | 13.9    | 19.8 |
| 11 17         | 1 21.00                       | -6 32.7                    | 1.560    | 2.398 | 15.6    | 19.6 | 11 17         | 1 14.63                       | -7 9.7                       | 1.417    | 2.249 | 17.2    | 20.0 |
| 11 27         | 1 18.16                       | -6 14.9                    | 1.646    | 2.397 | 18.6    | 19.8 | 11 27         | 1 10.59                       | -5 27.7                      | 1.512    | 2.260 | 20.1    | 20.3 |
| <b>506291</b> | 2017 <i>DQ</i> <sub>13</sub>  | 10 20.2 247°96 6°7/12.4 18 |          |       |         |      | <b>324310</b> | 2006 <i>DQ</i> <sub>184</sub> | 10 20.2 242°65 3°2/15.9 17   |          |       |         |      |
| 9 18          | 1 59.68                       | -9 17.7                    | 2.272    | 3.149 | 10.5    | 21.3 | 9 18          | 1 59.11                       | +2 6.2                       | 2.761    | 3.635 | 9.0     | 21.0 |
| 9 28          | 1 54.88                       | -10 39.7                   | 2.223    | 3.148 | 8.3     | 21.2 | 9 28          | 1 54.36                       | +0 48.7                      | 2.682    | 3.620 | 6.5     | 20.8 |
| 10 8          | 1 48.66                       | -11 54.9                   | 2.200    | 3.148 | 6.9     | 21.1 | 10 8          | 1 48.36                       | -0 31.7                      | 2.630    | 3.605 | 4.1     | 20.7 |
| 10 18         | 1 41.62                       | -12 56.9                   | 2.204    | 3.147 | 7.0     | 21.1 | 10 18         | 1 41.60                       | -1 50.3                      | 2.607    | 3.589 | 3.2     | 20.6 |
| 10 28         | 1 34.51                       | -13 40.2                   | 2.235    | 3.146 | 8.6     | 21.2 | 10 28         | 1 34.69                       | -3 1.5                       | 2.615    | 3.572 | 5.0     | 20.7 |
| 11 7          | 1 28.10                       | -14 1.7                    | 2.291    | 3.145 | 10.8    | 21.4 | 11 7          | 1 28.26                       | -4 0.9                       | 2.653    | 3.555 | 7.6     | 20.8 |
| 11 17         | 1 23.00                       | -14 0.8                    | 2.370    | 3.144 | 12.9    | 21.5 | 11 17         | 1 22.88                       | -4 45.2                      | 2.717    | 3.538 | 10.2    | 21.0 |
| 11 27         | 1 19.67                       | -13 38.9                   | 2.468    | 3.143 | 14.8    | 21.7 | 11 27         | 1 19.00                       | -5 12.8                      | 2.803    | 3.521 | 12.4    | 21.1 |
| <b>153605</b> | 2001 <i>SD</i> <sub>309</sub> | 10 20.2 105°85 1°7/21.5 18 |          |       |         |      | <b>266109</b> | 2006 <i>ST</i> <sub>245</sub> | 10 20.2 29°88 2°3/19.0 18    |          |       |         |      |
| 9 18          | 2 6.15                        | +16 50.0                   | 1.621    | 2.476 | 15.1    | 21.1 | 9 18          | 2 5.01                        | +7 14.3                      | 0.898    | 1.806 | 19.4    | 19.2 |
| 9 28          | 2 0.03                        | +16 30.6                   | 1.562    | 2.487 | 11.2    | 20.8 | 9 28          | 1 59.97                       | +6 55.3                      | 0.869    | 1.824 | 13.8    | 19.0 |
| 10 8          | 1 51.74                       | +15 55.2                   | 1.526    | 2.498 | 6.8     | 20.6 | 10 8          | 1 51.90                       | +6 27.9                      | 0.858    | 1.843 | 7.6     | 18.7 |
| 10 18         | 1 42.19                       | +15 6.9                    | 1.515    | 2.508 | 2.4     | 20.4 | 10 18         | 1 42.23                       | +5 59.1                      | 0.869    | 1.864 | 2.4     | 18.5 |
| 10 28         | 1 32.57                       | +14 11.3                   | 1.533    | 2.519 | 3.6     | 20.5 | 10 28         | 1 32.76                       | +5 37.3                      | 0.903    | 1.887 | 6.2     | 18.8 |
| 11 7          | 1 24.07                       | +13 15.8                   | 1.578    | 2.529 | 8.0     | 20.8 | 11 7          | 1 25.17                       | +5 29.1                      | 0.959    | 1.910 | 11.8    | 19.2 |
| 11 17         | 1 17.62                       | +12 27.2                   | 1.648    | 2.539 | 12.1    | 21.0 | 11 17         | 1 20.50                       | +5 38.2                      | 1.035    | 1.935 | 16.7    | 19.6 |
| 11 27         | 1 13.78                       | +11 51.1                   | 1.741    | 2.548 | 15.5    | 21.3 | 11 27         | 1 19.26                       | +6 5.5                       | 1.130    | 1.960 | 20.6    | 19.9 |
| <b>336128</b> | 2008 <i>PU</i> <sub>4</sub>   | 10 20.2 42°51 1°0/19.6 18  |          |       |         |      | <b>384351</b> | 2009 <i>UC</i> <sub>2</sub>   | 10 20.2 33°19 6°6/16.9 17    |          |       |         |      |
| 9 18          | 2 7.58                        | +9 1.3                     | 1.178    | 2.067 | 17.3    | 20.1 | 9 18          | 2 5.81                        | -1 11.1                      | 0.953    | 1.863 | 18.4    | 20.2 |
| 9 28          | 2 1.33                        | +8 53.6                    | 1.143    | 2.088 | 12.4    | 19.9 | 9 28          | 2 0.27                        | -1 56.6                      | 0.930    | 1.884 | 13.4    | 20.0 |
| 10 8          | 1 52.50                       | +8 36.8                    | 1.129    | 2.111 | 6.8     | 19.7 | 10 8          | 1 51.94                       | -2 37.0                      | 0.928    | 1.907 | 8.6     | 19.8 |
| 10 18         | 1 42.31                       | +8 15.6                    | 1.139    | 2.134 | 1.4     | 19.4 | 10 18         | 1 42.22                       | -3 3.2                       | 0.947    | 1.931 | 6.6     | 19.8 |
| 10 28         | 1 32.29                       | +7 56.0                    | 1.174    | 2.159 | 4.8     | 19.7 | 10 28         | 1 32.84                       | -3 7.8                       | 0.988    | 1.956 | 9.4     | 20.1 |
| 11 7          | 1 23.88                       | +7 44.3                    | 1.234    | 2.183 | 10.0    | 20.1 | 11 7          | 1 25.30                       | -2 48.1                      | 1.052    | 1.982 | 13.6    | 20.4 |
| 11 17         | 1 18.04                       | +7 44.4                    | 1.317    | 2.208 | 14.5    | 20.4 | 11 17         | 1 20.55                       | -2 5.1                       | 1.136    | 2.009 | 17.7    | 20.7 |
| 11 27         | 1 15.28                       | +7 58.8                    | 1.420    | 2.234 | 18.0    | 20.7 | 11 27         | 1 19.03                       | -1 2.3                       | 1.237    | 2.037 | 21.0    | 21.0 |
| <b>260652</b> | 2005 <i>GY</i> <sub>152</sub> | 10 20.2 179°15 2°3/18.5 18 |          |       |         |      | <b>396140</b> | 2013 <i>DU</i> <sub>5</sub>   | 10 20.2 173°90 1°3/17.8 18   |          |       |         |      |
| 9 18          | 2 7.75                        | +6 10.5                    | 1.658    | 2.533 | 13.9    | 21.2 | 9 18          | 1 53.74                       | +4 55.4                      | 4.443    | 5.310 | 6.0     | 21.6 |
| 9 28          | 2 1.16                        | +5 36.6                    | 1.594    | 2.534 | 9.9     | 21.0 | 9 28          | 1 50.12                       | +4 22.5                      | 4.373    | 5.310 | 4.2     | 21.5 |
| 10 8          | 1 52.40                       | +4 57.0                    | 1.555    | 2.535 | 5.6     | 20.7 | 10 8          | 1 45.83                       | +3 47.9                      | 4.331    | 5.310 | 2.4     | 21.4 |
| 10 18         | 1 42.32                       | +4 16.5                    | 1.542    | 2.535 | 2.3     | 20.5 | 10 18         | 1 41.14                       | +3 13.7                      | 4.320    | 5.310 | 1.3     | 21.3 |
| 10 28         | 1 32.10                       | +3 41.4                    | 1.558    | 2.535 | 5.2     | 20.7 | 10 28         | 1 36.40                       | +2 42.1                      | 4.339    | 5.310 | 2.5     | 21.4 |
| 11 7          | 1 22.91                       | +3 17.2                    | 1.601    | 2.535 | 9.5     | 21.0 | 11 7          | 1 31.96                       | +2 15.1                      | 4.388    | 5.311 | 4.3     | 21.5 |
| 11 17         | 1 15.71                       | +3 7.5                     | 1.669    | 2.534 | 13.4    | 21.2 | 11 17         | 1 28.13                       | +1 54.4                      | 4.465    | 5.311 | 6.0     | 21.6 |
| 11 27         | 1 11.09                       | +3 14.3                    | 1.758    | 2.532 | 16.7    | 21.4 | 11 27         | 1 25.18                       | +1 41.2                      | 4.567    | 5.311 | 7.5     | 21.8 |
| <b>332479</b> | 2008 <i>EL</i> <sub>100</sub> | 10 20.2 206°84 2°5/18.4 17 |          |       |         |      | <b>341844</b> | 2008 <i>EF</i> <sub>29</sub>  | 10 20.2 293°69 1°3/18.5 18   |          |       |         |      |
| 9 18          | 2 5.86                        | +6 33.3                    | 1.482    | 2.365 | 14.7    | 20.8 | 9 18          | 1 57.58                       | +6 54.9                      | 2.958    | 3.827 | 8.6     | 20.8 |
| 9 28          | 2 0.01                        | +5 50.7                    | 1.421    | 2.364 | 10.6    | 20.6 | 9 28          | 1 53.22                       | +6 21.1                      | 2.876    | 3.813 | 6.1     | 20.6 |
| 10 8          | 1 51.83                       | +5 0.8                     | 1.382    | 2.363 | 6.0     | 20.3 | 10 8          | 1 47.71                       | +5 43.2                      | 2.819    | 3.799 | 3.4     | 20.4 |
| 10 18         | 1 42.22                       | +4 9.7                     | 1.369    | 2.362 | 2.5     | 20.1 | 10 18         | 1 41.50                       | +5 4.0                       | 2.792    | 3.785 | 1.3     | 20.2 |
| 10 28         | 1 32.44                       | +3 24.7                    | 1.383    | 2.360 | 5.6     | 20.3 | 10 28         | 1 35.15                       | +4 27.1                      | 2.794    | 3.771 | 3.2     | 20.3 |
| 11 7          | 1 23.76                       | +2 52.5                    | 1.423    | 2.359 | 10.2    | 20.6 | 11 7          | 1 29.24                       | +3 55.9                      | 2.826    | 3.758 | 6.0     | 20.5 |
| 11 17         | 1 17.19                       | +2 37.4                    | 1.487    | 2.357 | 14.4    | 20.8 | 11 17         | 1 24.29                       | +3 33.1                      | 2.886    | 3.744 | 8.6     | 20.7 |
| 11 27         | 1 13.36                       | +2 41.3                    | 1.571    | 2.356 | 17.9    | 21.1 | 11 27         | 1 20.71                       | +3 20.8                      | 2.969    | 3.730 | 10.8    | 20.8 |
| <b>33688</b>  | Meghnabehari                  | 10 20.2 190°54 0°5/19.7 18 |          |       |         |      | <b>451636</b> | 2012 <i>HP</i> <sub>18</sub>  | 10 20.2 251°35 3°2/16.4 17   |          |       |         |      |
| 9 18          | 2 2.76                        | +10 39.8                   | 2.297    | 3.158 | 11.1    | 19.5 | 9 18          | 1 59.49                       | +2 14.2                      | 2.523    | 3.399 | 9.6     | 21.6 |
| 9 28          | 1 57.14                       | +10 13.0                   | 2.225    | 3.157 | 7.9     | 19.3 | 9 28          | 1 54.73                       | +1 10.8                      | 2.447    | 3.387 | 6.9     | 21.4 |
| 10 8          | 1 49.97                       | +9 38.6                    | 2.177    | 3.156 | 4.4     | 19.1 | 10 8          | 1 48.61                       | +0 4.8                       | 2.397    | 3.374 | 4.3     | 21.2 |
| 10 18         | 1 41.88                       | +8 59.6                    | 2.159    | 3.154 | 0.8     | 18.8 | 10 18         | 1 41.67                       | -0 59.0                      | 2.377    | 3.360 | 3.2     | 21.1 |
| 10 28         | 1 33.65                       | +8 20.4                    | 2.169    | 3.152 | 3.2     | 19.0 | 10 28         | 1 34.57                       | -1 55.3                      | 2.386    | 3.347 | 5.1     | 21.2 |
| 11 7          | 1 26.11                       | +7 45.4                    | 2.210    | 3.150 | 6.8     | 19.2 | 11 7          | 1 28.02                       | -2 39.8                      | 2.423    | 3.333 | 7.9     | 21.4 |
| 11 17         | 1 19.94                       | +7 18.4                    | 2.277    | 3.148 | 10.0    | 19.4 | 11 17         | 1 22.62                       | -3 9.4                       | 2.486    | 3.319 | 10.6    | 21.6 |
| 11 27         | 1 15.64                       | +7 2.4                     | 2.367    | 3.145 | 12.8    | 19.6 | 11 27         | 1 18.85                       | -3 22.7                      | 2.572    | 3.305 | 13.0    | 21.7 |
| <b>425737</b> | 2011 <i>BU</i> <sub>88</sub>  | 10 20.2 97°05 3°5/17.2 17  |          |       |         |      | <b>228114</b> | 2008 <i>TB</i> <sub>61</sub>  | 10 20.2 358°16 3°2/14.6 18 R |          |       |         |      |
| 9 18          | 2 3.04                        | +5 52.1                    | 1.518    | 2.405 | 14.2    | 20.6 | 9 18          | 1 55.02                       | -5 36.1                      | 4.176    | 5.047 | 6.3     | 19.7 |
| 9 28          | 1 57.79                       | +4 26.6                    | 1.466    | 2.413 | 10.1    | 20.4 | 9 28          | 1 51.06                       | -6 9.3                       | 4.118    | 5.047 | 4.7     | 19.6 |
| 10 8          | 1 50.47                       | +2 54.1                    | 1.439    | 2     |         |      |               |                               |                              |          |       |         |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$            | $\Delta$ | $r$   | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$            | $\Delta$ | $r$   | $\beta$ | $V$  |
|---------------|-------------------------------|----------------------------|----------|-------|---------|------|---------------|-------------------------------|----------------------------|----------|-------|---------|------|
| <b>394581</b> | 2007 <i>VH</i> <sub>76</sub>  | 10 20.2 359°49 0°1/20.2 15 |          |       |         |      | <b>493700</b> | 2015 <i>TA</i> <sub>72</sub>  | 10 20.2 304°31 1°6/21.7 17 |          |       |         |      |
| 9 18          | 1 59.62                       | +13 50.4                   | 1.391    | 2.273 | 15.6    | 21.4 | 9 18          | 2 0.46                        | +17 51.0                   | 1.946    | 2.797 | 13.1    | 21.4 |
| 9 28          | 1 55.68                       | +13 4.1                    | 1.329    | 2.270 | 11.3    | 21.1 | 9 28          | 1 56.04                       | +17 17.1                   | 1.844    | 2.767 | 9.9     | 21.2 |
| 10 8          | 1 49.46                       | +12 1.6                    | 1.288    | 2.269 | 6.5     | 20.8 | 10 8          | 1 49.65                       | +16 26.4                   | 1.766    | 2.737 | 6.2     | 20.9 |
| 10 18         | 1 41.84                       | +10 48.1                   | 1.272    | 2.268 | 1.2     | 20.5 | 10 18         | 1 41.92                       | +15 20.9                   | 1.715    | 2.707 | 2.3     | 20.6 |
| 10 28         | 1 34.04                       | +9 32.0                    | 1.282    | 2.268 | 4.1     | 20.7 | 10 28         | 1 33.77                       | +14 5.7                    | 1.691    | 2.677 | 3.3     | 20.6 |
| 11 7          | 1 27.31                       | +8 22.7                    | 1.318    | 2.269 | 9.2     | 21.0 | 11 7          | 1 26.23                       | +12 48.0                   | 1.696    | 2.647 | 7.5     | 20.8 |
| 11 17         | 1 22.61                       | +7 27.8                    | 1.377    | 2.271 | 13.7    | 21.3 | 11 17         | 1 20.22                       | +11 35.3                   | 1.727    | 2.618 | 11.6    | 21.0 |
| 11 27         | 1 20.58                       | +6 52.3                    | 1.457    | 2.274 | 17.5    | 21.5 | 11 27         | 1 16.45                       | +10 34.6                   | 1.780    | 2.588 | 15.2    | 21.2 |
| <b>47151</b>  | 1999 <i>RV</i> <sub>88</sub>  | 10 20.2 296°48 2°9/22.1 18 |          |       |         |      | <b>320176</b> | 2007 <i>GE</i> <sub>24</sub>  | 10 20.2 256°09 0°7/19.6 18 |          |       |         |      |
| 9 18          | 2 5.52                        | +18 6.1                    | 1.375    | 2.236 | 17.0    | 18.5 | 9 18          | 2 3.13                        | +9 9.0                     | 2.286    | 3.150 | 11.0    | 21.1 |
| 9 28          | 2 0.32                        | +18 9.4                    | 1.295    | 2.221 | 12.9    | 18.3 | 9 28          | 1 57.47                       | +8 57.2                    | 2.211    | 3.145 | 7.9     | 20.9 |
| 10 8          | 1 52.33                       | +17 53.9                   | 1.236    | 2.207 | 8.3     | 18.0 | 10 8          | 1 50.23                       | +8 39.4                    | 2.161    | 3.140 | 4.4     | 20.6 |
| 10 18         | 1 42.41                       | +17 20.2                   | 1.201    | 2.192 | 3.7     | 17.7 | 10 18         | 1 42.00                       | +8 18.4                    | 2.139    | 3.135 | 0.9     | 20.4 |
| 10 28         | 1 31.96                       | +16 32.9                   | 1.192    | 2.177 | 4.4     | 17.7 | 10 28         | 1 33.61                       | +7 57.7                    | 2.147    | 3.130 | 3.2     | 20.6 |
| 11 7          | 1 22.52                       | +15 39.8                   | 1.208    | 2.163 | 9.4     | 17.9 | 11 7          | 1 25.88                       | +7 41.0                    | 2.184    | 3.125 | 6.8     | 20.8 |
| 11 17         | 1 15.40                       | +14 50.0                   | 1.248    | 2.149 | 14.3    | 18.1 | 11 17         | 1 19.51                       | +7 31.5                    | 2.248    | 3.120 | 10.1    | 21.0 |
| 11 27         | 1 11.45                       | +14 11.6                   | 1.308    | 2.135 | 18.5    | 18.4 | 11 27         | 1 15.04                       | +7 31.9                    | 2.335    | 3.114 | 12.9    | 21.2 |
| <b>473566</b> | 2015 <i>XA</i> <sub>217</sub> | 10 20.2 227°17 3°6/16.6 18 |          |       |         |      | <b>448022</b> | 2008 <i>ET</i> <sub>14</sub>  | 10 20.2 311°98 2°1/18.2 18 |          |       |         |      |
| 9 18          | 2 1.70                        | -0 16.9                    | 2.396    | 3.272 | 10.1    | 20.9 | 9 18          | 2 0.25                        | +7 44.8                    | 1.900    | 2.779 | 12.2    | 21.4 |
| 9 28          | 1 56.30                       | -0 53.9                    | 2.332    | 3.269 | 7.3     | 20.7 | 9 28          | 1 55.62                       | +6 43.2                    | 1.832    | 2.774 | 8.7     | 21.2 |
| 10 8          | 1 49.49                       | -1 30.4                    | 2.293    | 3.267 | 4.7     | 20.6 | 10 8          | 1 49.25                       | +5 33.6                    | 1.788    | 2.769 | 4.8     | 21.0 |
| 10 18         | 1 41.84                       | -2 2.2                     | 2.282    | 3.264 | 3.6     | 20.5 | 10 18         | 1 41.83                       | +4 21.7                    | 1.771    | 2.764 | 2.1     | 20.8 |
| 10 28         | 1 34.09                       | -2 24.9                    | 2.301    | 3.261 | 5.4     | 20.6 | 10 28         | 1 34.26                       | +3 14.3                    | 1.783    | 2.760 | 4.7     | 21.0 |
| 11 7          | 1 26.98                       | -2 35.5                    | 2.348    | 3.258 | 8.1     | 20.8 | 11 7          | 1 27.46                       | +2 18.0                    | 1.822    | 2.755 | 8.6     | 21.2 |
| 11 17         | 1 21.16                       | -2 32.2                    | 2.420    | 3.255 | 10.8    | 21.0 | 11 17         | 1 22.20                       | +1 37.3                    | 1.887    | 2.751 | 12.1    | 21.4 |
| 11 27         | 1 17.07                       | -2 14.5                    | 2.515    | 3.252 | 13.2    | 21.1 | 11 27         | 1 19.03                       | +1 14.9                    | 1.973    | 2.747 | 15.1    | 21.6 |
| <b>159155</b> | 2004 <i>XP</i> <sub>137</sub> | 10 20.2 330°06 6°1/14.1 18 |          |       |         |      | <b>164901</b> | 1999 <i>VK</i> <sub>181</sub> | 10 20.2 32°97 0°8/20.8 18  |          |       |         |      |
| 9 18          | 1 59.33                       | -4 17.1                    | 1.912    | 2.801 | 11.6    | 19.7 | 9 18          | 2 2.80                        | +14 42.6                   | 1.482    | 2.354 | 15.4    | 19.9 |
| 9 28          | 1 54.92                       | -5 36.0                    | 1.854    | 2.793 | 8.8     | 19.5 | 9 28          | 1 57.80                       | +14 14.6                   | 1.426    | 2.361 | 11.3    | 19.6 |
| 10 8          | 1 48.83                       | -6 52.0                    | 1.820    | 2.785 | 6.5     | 19.3 | 10 8          | 1 50.59                       | +13 31.6                   | 1.391    | 2.368 | 6.6     | 19.4 |
| 10 18         | 1 41.72                       | -7 57.9                    | 1.812    | 2.778 | 6.3     | 19.3 | 10 18         | 1 42.07                       | +12 37.5                   | 1.381    | 2.376 | 1.6     | 19.1 |
| 10 28         | 1 34.48                       | -8 46.9                    | 1.831    | 2.771 | 8.2     | 19.4 | 10 28         | 1 33.46                       | +11 39.2                   | 1.398    | 2.384 | 3.7     | 19.3 |
| 11 7          | 1 28.00                       | -9 14.3                    | 1.876    | 2.764 | 11.1    | 19.6 | 11 7          | 1 25.97                       | +10 44.4                   | 1.441    | 2.393 | 8.5     | 19.6 |
| 11 17         | 1 23.01                       | -9 18.5                    | 1.944    | 2.758 | 13.9    | 19.7 | 11 17         | 1 20.52                       | +9 59.9                    | 1.509    | 2.402 | 12.8    | 19.8 |
| 11 27         | 1 20.05                       | -9 0.1                     | 2.031    | 2.752 | 16.4    | 19.9 | 11 27         | 1 17.70                       | +9 30.6                    | 1.598    | 2.412 | 16.3    | 20.1 |
| <b>134015</b> | 2004 <i>VY</i> <sub>52</sub>  | 10 20.2 118°96 3°0/22.6 18 |          |       |         |      | <b>494659</b> | 2000 <i>YQ</i> <sub>13</sub>  | 10 20.2 165°63 15°9/2.8 17 |          |       |         |      |
| 9 18          | 2 6.83                        | +20 59.2                   | 1.450    | 2.297 | 17.0    | 20.2 | 9 18          | 2 14.16                       | +45 53.2                   | 1.252    | 1.975 | 25.7    | 21.1 |
| 9 28          | 2 0.80                        | +20 29.4                   | 1.390    | 2.307 | 12.9    | 20.0 | 9 28          | 2 7.82                        | +47 6.8                    | 1.187    | 1.977 | 23.2    | 21.0 |
| 10 8          | 1 52.30                       | +19 37.0                   | 1.351    | 2.317 | 8.3     | 19.8 | 10 8          | 1 57.10                       | +47 37.0                   | 1.134    | 1.980 | 20.5    | 20.8 |
| 10 18         | 1 42.36                       | +18 24.9                   | 1.338    | 2.327 | 3.9     | 19.5 | 10 18         | 1 43.34                       | +47 13.0                   | 1.098    | 1.982 | 17.9    | 20.6 |
| 10 28         | 1 32.35                       | +17 0.0                    | 1.351    | 2.336 | 4.2     | 19.6 | 10 28         | 1 28.98                       | +45 50.6                   | 1.080    | 1.983 | 16.2    | 20.5 |
| 11 7          | 1 23.63                       | +15 32.6                   | 1.391    | 2.345 | 8.5     | 19.9 | 11 7          | 1 16.65                       | +43 37.3                   | 1.082    | 1.985 | 16.1    | 20.5 |
| 11 17         | 1 17.22                       | +14 12.4                   | 1.456    | 2.354 | 12.9    | 20.1 | 11 17         | 1 8.26                        | +40 50.3                   | 1.106    | 1.985 | 17.6    | 20.6 |
| 11 27         | 1 13.71                       | +13 7.4                    | 1.543    | 2.362 | 16.6    | 20.4 | 11 27         | 1 4.70                        | +37 51.3                   | 1.150    | 1.985 | 20.0    | 20.8 |
| <b>173707</b> | 2001 <i>QL</i> <sub>94</sub>  | 10 20.2 12°15 1°7/21.6 18  |          |       |         |      | <b>520616</b> | 2014 <i>OR</i> <sub>412</sub> | 10 20.2 339°25 2°3/22.1 17 |          |       |         |      |
| 9 18          | 2 2.86                        | +16 13.2                   | 1.629    | 2.491 | 14.7    | 19.7 | 9 18          | 2 3.85                        | +17 26.3                   | 2.042    | 2.887 | 12.9    | 21.2 |
| 9 28          | 1 57.78                       | +16 7.1                    | 1.565    | 2.493 | 11.0    | 19.4 | 9 28          | 1 58.24                       | +17 37.7                   | 1.967    | 2.884 | 9.7     | 21.0 |
| 10 8          | 1 50.57                       | +15 46.4                   | 1.522    | 2.495 | 6.7     | 19.2 | 10 8          | 1 50.77                       | +17 36.8                   | 1.914    | 2.881 | 6.2     | 20.8 |
| 10 18         | 1 42.05                       | +15 13.4                   | 1.505    | 2.498 | 2.4     | 18.9 | 10 18         | 1 42.12                       | +17 24.5                   | 1.889    | 2.878 | 2.8     | 20.6 |
| 10 28         | 1 33.36                       | +14 32.8                   | 1.515    | 2.501 | 3.6     | 19.0 | 10 28         | 1 33.24                       | +17 3.6                    | 1.892    | 2.876 | 3.3     | 20.6 |
| 11 7          | 1 25.65                       | +13 51.0                   | 1.552    | 2.505 | 7.9     | 19.3 | 11 7          | 1 25.12                       | +16 38.5                   | 1.923    | 2.874 | 6.8     | 20.8 |
| 11 17         | 1 19.84                       | +13 14.5                   | 1.614    | 2.510 | 11.9    | 19.6 | 11 17         | 1 18.58                       | +16 14.1                   | 1.981    | 2.871 | 10.3    | 21.0 |
| 11 27         | 1 16.56                       | +12 48.6                   | 1.698    | 2.514 | 15.4    | 19.8 | 11 27         | 1 14.23                       | +15 55.2                   | 2.062    | 2.870 | 13.4    | 21.2 |
| <b>306963</b> | 2001 <i>VC</i> <sub>5</sub>   | 10 20.2 27°07 7°4/25.5 18  |          |       |         |      | <b>145349</b> | 2005 <i>MS</i> <sub>15</sub>  | 10 20.2 124°05 0°1/20.3 18 |          |       |         |      |
| 9 18          | 2 1.30                        | +27 14.9                   | 0.872    | 1.739 | 23.8    | 19.1 | 9 18          | 2 3.32                        | +12 52.0                   | 2.232    | 3.087 | 11.5    | 21.2 |
| 9 28          | 1 57.85                       | +27 21.5                   | 0.833    | 1.752 | 19.0    | 18.9 | 9 28          | 1 57.51                       | +12 19.7                   | 2.172    | 3.100 | 8.3     | 21.0 |
| 10 8          | 1 51.00                       | +26 48.9                   | 0.809    | 1.766 | 13.8    | 18.7 | 10 8          | 1 50.18                       | +11 38.1                   | 2.136    | 3.113 | 4.7     | 20.8 |
| 10 18         | 1 42.13                       | +25 37.7                   | 0.804    | 1.782 | 9.0     | 18.5 | 10 18         | 1 42.00                       | +10 50.4                   | 2.129    | 3.125 | 0.9     | 20.6 |
| 10 28         | 1 33.26                       | +23 57.0                   | 0.819    | 1.800 | 7.6     | 18.5 | 10 28         | 1 33.78                       | +10 1.3                    | 2.152    | 3.137 | 3.0     | 20.7 |
| 11 7          | 1 26.30                       | +22 2.9                    | 0.857    | 1.819 | 10.9    | 18.7 | 11 7          | 1 26.35                       | +9 15.8                    | 2.204    | 3.148 | 6.6     | 21.0 |
| 11 17         | 1 22.48                       | +20 12.5                   | 0.915    | 1.839 | 15.6    | 19.1 | 11 17         | 1 20.37                       | +8 38.1                    | 2.284    | 3.159 | 9.8     | 21.2 |
| 11 27         | 1 22.37                       | +18 39.5                   | 0.991    | 1.860 | 19.9    | 19.4 | 11 27         | 1 16.31                       | +8 11.6                    | 2.387    | 3.169 | 12.5    | 21.4 |
| <b>189034</b> | 2000 <i>AZ</i> <sub>226</sub> | 10 20.2 119°92 4°8/24.0 18 |          |       |         |      | <b>487452</b> | 2014 <i>SD</i> <sub>31</sub>  | 10 20.2 36°49 0°3/20.4 18  |          |       |         |      |
| 9 18          | 2 7.53                        | +24 13.0                   | 1.639    | 2.465 | 16.4    | 20.5 | 9 18          | 2 3.47                        | +11 47.3                   | 2.104    | 2.964 | 11.9    | 21.0 |
| 9 28          | 2 1.23                        | +24 20.6                   | 1.574    | 2.473 | 12.9    | 20.3 | 9 28          | 1 57.78                       | +11 45.4                   | 2.038    | 2.969 | 8.7     | 20.8 |
| 10 8          | 1 52.56                       | +24 6.5                    | 1.530    | 2.481 | 9.0     | 20.1 | 10 8          | 1 50.42                       | +11 35.5                   | 1.997    | 2.974 | 4.9     | 20.6 |
| 10 18         | 1 42.43                       | +23 30.7                   | 1.511    | 2.489 | 5.6     | 19.9 | 10 18         | 1 42.05                       | +11 19.9                   | 1.983    | 2.979 | 1.0     | 20.3 |
| 10 28         | 1 32.14                       | +22 36.9                   | 1.519    | 2.497 | 5.2     | 19.9 | 10 28         | 1 33.57                       | +11 1.9                    | 1.998    | 2.984 | 3.0     | 20.5 |
| 11 7          | 1 22.99                       | +21 32.6                   | 1.554    | 2.504 | 8.2     | 20.1 | 11 7          | 1 25.86                       | +10 45.6                   | 2.042    | 2.989 | 6.8     | 20.7 |
| 11 17         | 1 16.00                       | +20 26.5                   | 1.614    | 2.511 | 11.9    | 20.4 | 11 17         | 1 19.65                       | +10 34.5                   | 2.113    | 2.994 | 10.2    | 21.0 |
| 11 27         | 1 11.82                       | +19 27.1                   | 1.697    | 2.518 | 15.2    | 20.6 | 11 27         | 1 15.49                       | +10 31.9                   | 2.207    | 3.000 | 13.1    | 21.2 |
| <b>132629</b> | 2002 <i>LU</i> <sub>22</sub>  | 10 20.2 59°20 1°8/21.9 18  |          |       |         |      | <b>379936</b> | 2012 <i>LX</i> <sub>7</sub>   | 10 20.2 32°29 5°8/16.4 18  |          |       |         |      |
| 9 18          | 2 1.71                        | +19 20.6                   | 1.639    | 2.493 | 15.1    | 19.8 | 9 18          | 2 3.41                        | +0 51.2                    | 1.135    | 2.039 | 16.5    | 19.9 |
| 9 28          | 1 56.86                       | +18 26.8                   | 1.578    | 2.501 | 11.3    | 19.6 | 9 28          | 1 58.50                       | -0 18.5                    | 1.098    | 2.0   |         |      |

EPHEMERIDES

10 20.2

10 20.2

| 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$ | $r$    | $\beta$  | $V$  | 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$ | $r$    | $\beta$  | $V$  |
|---------------|------------------------|-----------------|----------|--------|----------|------|---------------|------------------------|-----------------|----------|--------|----------|------|
| <b>25396</b>  | 1999 VL <sub>10</sub>  |                 | 10 20.2  | 17°62  | 2°3/22.0 | 18   | <b>454606</b> | 2014 QD <sub>22</sub>  |                 | 10 20.2  | 351°51 | 0°2/20.4 | 17   |
| 9 18          | 1 54.81                | +20 32.8        | 0.843    | 1.740  | 21.5     | 16.4 | 9 18          | 1 58.91                | +14 11.3        | 1.949    | 2.814  | 12.5     | 21.1 |
| 9 28          | 1 53.02                | +19 25.0        | 0.804    | 1.750  | 16.1     | 16.1 | 9 28          | 1 54.67                | +13 22.0        | 1.878    | 2.811  | 9.1      | 20.9 |
| 10 8          | 1 48.21                | +17 43.5        | 0.783    | 1.761  | 9.9      | 15.8 | 10 8          | 1 48.73                | +12 19.9        | 1.831    | 2.809  | 5.2      | 20.7 |
| 10 18         | 1 41.66                | +15 37.4        | 0.782    | 1.775  | 3.6      | 15.6 | 10 18         | 1 41.78                | +11 9.1         | 1.811    | 2.807  | 1.0      | 20.4 |
| 10 28         | 1 35.11                | +13 22.7        | 0.803    | 1.791  | 4.7      | 15.7 | 10 28         | 1 34.68                | +9 55.9         | 1.819    | 2.805  | 3.2      | 20.6 |
| 11 7          | 1 30.18                | +11 17.5        | 0.845    | 1.809  | 10.7     | 16.1 | 11 7          | 1 28.35                | +8 47.0         | 1.856    | 2.803  | 7.3      | 20.8 |
| 11 17         | 1 27.95                | +9 35.9         | 0.909    | 1.829  | 16.1     | 16.5 | 11 17         | 1 23.52                | +7 48.4         | 1.919    | 2.803  | 11.0     | 21.0 |
| 11 27         | 1 28.94                | +8 25.6         | 0.990    | 1.850  | 20.6     | 16.8 | 11 27         | 1 20.71                | +7 4.6          | 2.004    | 2.802  | 14.1     | 21.2 |
| <b>512100</b> | 2015 OS <sub>29</sub>  |                 | 10 20.2  | 114°21 | 8°9/29.3 | 18   | <b>441292</b> | 2007 YM <sub>13</sub>  |                 | 10 20.2  | 359°42 | 9°2/13.6 | 18   |
| 9 18          | 2 13.34                | +38 48.6        | 2.293    | 3.002  | 15.6     | 21.5 | 9 18          | 2 4.45                 | -11 40.8        | 1.561    | 2.443  | 14.2     | 20.5 |
| 9 28          | 2 5.28                 | +39 52.6        | 2.226    | 3.020  | 13.6     | 21.4 | 9 28          | 1 58.85                | -12 39.2        | 1.516    | 2.442  | 11.4     | 20.3 |
| 10 8          | 1 54.84                | +40 32.8        | 2.180    | 3.037  | 11.5     | 21.3 | 10 8          | 1 51.14                | -13 25.1        | 1.493    | 2.441  | 9.5      | 20.2 |
| 10 18         | 1 42.89                | +40 45.2        | 2.158    | 3.054  | 9.7      | 21.2 | 10 18         | 1 42.21                | -13 50.1        | 1.494    | 2.440  | 9.4      | 20.2 |
| 10 28         | 1 30.66                | +40 29.4        | 2.161    | 3.070  | 8.9      | 21.2 | 10 28         | 1 33.24                | -13 48.5        | 1.520    | 2.441  | 11.2     | 20.3 |
| 11 7          | 1 19.45                | +39 49.0        | 2.191    | 3.086  | 9.4      | 21.3 | 11 7          | 1 25.38                | -13 18.5        | 1.570    | 2.441  | 13.8     | 20.5 |
| 11 17         | 1 10.30                | +38 51.1        | 2.247    | 3.101  | 10.8     | 21.4 | 11 17         | 1 19.50                | -12 22.0        | 1.640    | 2.443  | 16.6     | 20.7 |
| 11 27         | 1 3.90                 | +37 44.6        | 2.327    | 3.116  | 12.6     | 21.6 | 11 27         | 1 16.16                | -11 2.8         | 1.728    | 2.444  | 19.0     | 20.9 |
| <b>385368</b> | 2002 PF <sub>179</sub> |                 | 10 20.2  | 107°90 | 5°8/26.8 | 15   | <b>382500</b> | 2001 QV <sub>214</sub> |                 | 10 20.2  | 20°25  | 1°1/19.5 | 18   |
| 9 18          | 2 9.70                 | +31 49.7        | 2.433    | 3.189  | 13.6     | 22.1 | 9 18          | 2 1.37                 | +10 38.3        | 1.035    | 1.936  | 18.1     | 20.1 |
| 9 28          | 2 2.11                 | +32 4.4         | 2.375    | 3.219  | 11.2     | 22.0 | 9 28          | 1 57.32                | +10 2.7         | 0.993    | 1.944  | 13.0     | 19.9 |
| 10 8          | 1 52.78                | +31 58.9        | 2.339    | 3.247  | 8.7      | 21.9 | 10 8          | 1 50.52                | +9 13.4         | 0.970    | 1.954  | 7.2      | 19.6 |
| 10 18         | 1 42.48                | +31 32.4        | 2.330    | 3.275  | 6.6      | 21.8 | 10 18         | 1 42.11                | +8 17.3         | 0.970    | 1.966  | 1.4      | 19.3 |
| 10 28         | 1 32.21                | +30 47.1        | 2.349    | 3.301  | 5.8      | 21.8 | 10 28         | 1 33.68                | +7 23.9         | 0.994    | 1.979  | 5.3      | 19.6 |
| 11 7          | 1 22.92                | +29 48.1        | 2.397    | 3.327  | 6.9      | 21.9 | 11 7          | 1 26.74                | +6 42.5         | 1.040    | 1.993  | 10.9     | 20.0 |
| 11 17         | 1 15.36                | +28 41.9        | 2.473    | 3.352  | 9.0      | 22.1 | 11 17         | 1 22.37                | +6 19.1         | 1.108    | 2.008  | 15.8     | 20.3 |
| 11 27         | 1 10.03                | +27 35.4        | 2.575    | 3.376  | 11.2     | 22.3 | 11 27         | 1 21.14                | +6 16.7         | 1.194    | 2.025  | 19.7     | 20.6 |
| <b>485927</b> | 2012 GO <sub>36</sub>  |                 | 10 20.2  | 236°99 | 1°9/22.6 | 18   | <b>340224</b> | 2006 BY <sub>50</sub>  |                 | 10 20.2  | 330°85 | 0°6/20.9 | 17   |
| 9 18          | 2 0.35                 | +20 17.6        | 2.691    | 3.517  | 10.7     | 21.3 | 9 18          | 1 58.00                | +14 9.5         | 2.474    | 3.331  | 10.5     | 20.0 |
| 9 28          | 1 55.38                | +19 41.0        | 2.598    | 3.505  | 8.1      | 21.1 | 9 28          | 1 53.79                | +13 49.1        | 2.389    | 3.317  | 7.7      | 19.8 |
| 10 8          | 1 49.02                | +18 50.9        | 2.531    | 3.493  | 5.2      | 20.9 | 10 8          | 1 48.18                | +13 19.2        | 2.329    | 3.304  | 4.5      | 19.6 |
| 10 18         | 1 41.81                | +17 49.0        | 2.492    | 3.480  | 2.4      | 20.7 | 10 18         | 1 41.68                | +12 42.3        | 2.296    | 3.291  | 1.2      | 19.4 |
| 10 28         | 1 34.43                | +16 39.1        | 2.483    | 3.467  | 2.6      | 20.7 | 10 28         | 1 35.00                | +12 1.8         | 2.293    | 3.278  | 2.6      | 19.5 |
| 11 7          | 1 27.60                | +15 26.5        | 2.504    | 3.454  | 5.5      | 20.8 | 11 7          | 1 28.85                | +11 22.1        | 2.318    | 3.266  | 6.0      | 19.7 |
| 11 17         | 1 21.94                | +14 16.3        | 2.554    | 3.440  | 8.5      | 21.0 | 11 17         | 1 23.86                | +10 47.4        | 2.370    | 3.255  | 9.1      | 19.8 |
| 11 27         | 1 17.93                | +13 13.7        | 2.630    | 3.426  | 11.1     | 21.2 | 11 27         | 1 20.54                | +10 21.3        | 2.446    | 3.244  | 11.9     | 20.0 |
| <b>329272</b> | 1999 TP <sub>178</sub> |                 | 10 20.2  | 3°81   | 1°7/21.4 | 18   | <b>36152</b>  | 1999 RE <sub>196</sub> |                 | 10 20.2  | 133°86 | 3°9/24.5 | 18   |
| 9 18          | 2 0.00                 | +17 36.8        | 1.089    | 1.973  | 18.7     | 20.0 | 9 18          | 2 2.39                 | +25 15.3        | 2.265    | 3.074  | 13.0     | 18.7 |
| 9 28          | 1 56.48                | +16 55.5        | 1.032    | 1.972  | 14.0     | 19.7 | 9 28          | 1 57.05                | +25 6.0         | 2.189    | 3.078  | 10.2     | 18.5 |
| 10 8          | 1 50.14                | +15 49.5        | 0.994    | 1.972  | 8.4      | 19.4 | 10 8          | 1 50.04                | +24 39.0        | 2.137    | 3.081  | 7.3      | 18.3 |
| 10 18         | 1 42.04                | +14 24.0        | 0.979    | 1.973  | 2.7      | 19.1 | 10 18         | 1 42.02                | +23 55.1        | 2.110    | 3.085  | 4.6      | 18.2 |
| 10 28         | 1 33.73                | +12 49.3        | 0.987    | 1.975  | 4.4      | 19.2 | 10 28         | 1 33.87                | +22 57.6        | 2.112    | 3.088  | 4.2      | 18.1 |
| 11 7          | 1 26.78                | +11 18.3        | 1.019    | 1.978  | 10.1     | 19.6 | 11 7          | 1 26.48                | +21 51.9        | 2.143    | 3.092  | 6.4      | 18.3 |
| 11 17         | 1 22.35                | +10 2.4         | 1.073    | 1.982  | 15.4     | 19.9 | 11 17         | 1 20.58                | +20 44.4        | 2.201    | 3.095  | 9.3      | 18.5 |
| 11 27         | 1 21.13                | +9 9.2          | 1.147    | 1.987  | 19.7     | 20.2 | 11 27         | 1 16.71                | +19 41.5        | 2.285    | 3.098  | 12.0     | 18.7 |
| <b>340028</b> | 2005 UV <sub>412</sub> |                 | 10 20.2  | 297°25 | 0°6/19.4 | 16   | <b>47595</b>  | 2000 AK <sub>307</sub> |                 | 10 20.2  | 162°30 | 0°1/20.1 | 18   |
| 9 18          | 1 57.78                | +9 43.8         | 2.915    | 3.777  | 8.9      | 21.6 | 9 18          | 2 0.85                 | +11 59.9        | 2.662    | 3.516  | 9.9      | 19.8 |
| 9 28          | 1 53.41                | +9 14.3         | 2.831    | 3.765  | 6.4      | 21.4 | 9 28          | 1 55.63                | +11 31.4        | 2.591    | 3.520  | 7.1      | 19.6 |
| 10 8          | 1 47.87                | +8 39.0         | 2.773    | 3.752  | 3.6      | 21.2 | 10 8          | 1 49.12                | +10 55.6        | 2.546    | 3.523  | 4.0      | 19.4 |
| 10 18         | 1 41.60                | +8 0.6          | 2.743    | 3.739  | 0.8      | 21.0 | 10 18         | 1 41.86                | +10 15.0        | 2.530    | 3.526  | 0.7      | 19.2 |
| 10 28         | 1 35.19                | +7 22.5         | 2.744    | 3.726  | 2.7      | 21.1 | 10 28         | 1 34.50                | +9 33.3         | 2.545    | 3.529  | 2.6      | 19.3 |
| 11 7          | 1 29.23                | +6 48.2         | 2.774    | 3.713  | 5.7      | 21.3 | 11 7          | 1 27.74                | +8 54.5         | 2.589    | 3.531  | 5.8      | 19.6 |
| 11 17         | 1 24.25                | +6 20.8         | 2.832    | 3.701  | 8.4      | 21.5 | 11 17         | 1 22.15                | +8 22.3         | 2.660    | 3.533  | 8.7      | 19.8 |
| 11 27         | 1 20.67                | +6 2.8          | 2.914    | 3.688  | 10.7     | 21.6 | 11 27         | 1 18.15                | +7 59.3         | 2.757    | 3.535  | 11.2     | 19.9 |
| <b>412020</b> | 2013 CT <sub>9</sub>   |                 | 10 20.2  | 224°74 | 7°2/13.0 | 18   | <b>320195</b> | 2007 GG <sub>67</sub>  |                 | 10 20.2  | 159°15 | 0°4/20.7 | 18   |
| 9 18          | 2 2.45                 | -8 25.1         | 1.973    | 2.852  | 11.8     | 20.7 | 9 18          | 2 1.31                 | +13 36.1        | 2.523    | 3.375  | 10.5     | 21.8 |
| 9 28          | 1 57.11                | -9 47.3         | 1.920    | 2.848  | 9.3      | 20.5 | 9 28          | 1 56.03                | +13 11.4        | 2.452    | 3.378  | 7.6      | 21.6 |
| 10 8          | 1 50.07                | -11 2.7         | 1.892    | 2.844  | 7.5      | 20.4 | 10 8          | 1 49.37                | +12 37.9        | 2.406    | 3.381  | 4.4      | 21.4 |
| 10 18         | 1 42.01                | -12 4.1         | 1.890    | 2.839  | 7.5      | 20.4 | 10 18         | 1 41.90                | +11 58.2        | 2.389    | 3.384  | 1.0      | 21.2 |
| 10 28         | 1 33.86                | -12 44.9        | 1.915    | 2.835  | 9.3      | 20.5 | 10 28         | 1 34.34                | +11 15.9        | 2.401    | 3.386  | 2.6      | 21.3 |
| 11 7          | 1 26.52                | -13 1.6         | 1.966    | 2.830  | 11.8     | 20.6 | 11 7          | 1 27.40                | +10 35.3        | 2.443    | 3.389  | 5.9      | 21.6 |
| 11 17         | 1 20.73                | -12 53.7        | 2.038    | 2.825  | 14.3     | 20.8 | 11 17         | 1 21.70                | +10 0.5         | 2.513    | 3.391  | 8.9      | 21.8 |
| 11 27         | 1 17.02                | -12 23.0        | 2.130    | 2.820  | 16.5     | 21.0 | 11 27         | 1 17.70                | +9 34.6         | 2.607    | 3.392  | 11.5     | 21.9 |
| <b>86150</b>  | 1999 RP <sub>200</sub> |                 | 10 20.2  | 126°61 | 5°2/25.9 | 18 R | <b>77310</b>  | 2001 FD <sub>81</sub>  |                 | 10 20.2  | 261°22 | 4°0/23.8 | 18   |
| 9 18          | 2 4.62                 | +29 0.5         | 2.402    | 3.184  | 13.1     | 19.6 | 9 18          | 2 3.42                 | +23 45.6        | 1.850    | 2.676  | 14.8     | 19.8 |
| 9 28          | 1 58.63                | +29 14.2        | 2.329    | 3.193  | 10.7     | 19.4 | 9 28          | 1 58.19                | +23 34.0        | 1.768    | 2.669  | 11.6     | 19.6 |
| 10 8          | 1 50.92                | +29 9.6         | 2.278    | 3.201  | 8.1      | 19.3 | 10 8          | 1 50.87                | +23 2.1         | 1.709    | 2.662  | 8.0      | 19.4 |
| 10 18         | 1 42.17                | +28 46.3        | 2.253    | 3.210  | 5.9      | 19.2 | 10 18         | 1 42.20                | +22 10.5        | 1.674    | 2.655  | 4.8      | 19.1 |
| 10 28         | 1 33.28                | +28 6.1         | 2.255    | 3.218  | 5.3      | 19.1 | 10 28         | 1 33.27                | +21 3.2         | 1.668    | 2.648  | 4.4      | 19.1 |
| 11 7          | 1 25.17                | +27 13.7        | 2.287    | 3.226  | 6.7      | 19.2 | 11 7          | 1 25.19                | +19 47.2        | 1.688    | 2.641  | 7.5      | 19.3 |
| 11 17         | 1 18.57                | +26 14.9        | 2.346    | 3.233  | 9.1      | 19.4 | 11 17         | 1 18.90                | +18 30.8        | 1.736    | 2.633  | 11.1     | 19.5 |
| 11 27         | 1 14.05                | +25 16.2        | 2.430    | 3.241  | 11.5     | 19.6 | 11 27         | 1 15.06                | +17 22.0        | 1.806    | 2.626  | 14.5     | 19.7 |
| <b>15541</b>  | 2000 CN <sub>63</sub>  |                 | 10 20.2  | 296°24 | 7°7/27.3 | 18   | <b>40057</b>  | 1998 KJ <sub>45</sub>  |                 | 10 20.2  | 33°54  | 9°3/15.6 | 18   |
| 9 18          | 2 6.32                 | +34 6.9         | 2.298    | 3.050  | 14.5     |      |               |                        |                 |          |        |          |      |

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| 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$ | $r$    | $\beta$  | $V$  | 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$ | $r$    | $\beta$  | $V$  |
|---------------|------------------------|-----------------|----------|--------|----------|------|---------------|------------------------|-----------------|----------|--------|----------|------|
| <b>517506</b> | 2014 QY <sub>375</sub> |                 | 10 20.2  | 52°12  | 1°4/18.7 | 18   | <b>123375</b> | 2000 WU <sub>44</sub>  |                 | 10 20.2  | 335°15 | 0°8/19.6 | 18   |
| 9 18          | 1 59.31                | + 9 9.4         | 2.168    | 3.040  | 11.1     | 21.3 | 9 18          | 2 0.85                 | +10 38.6        | 1.830    | 2.704  | 12.8     | 19.7 |
| 9 28          | 1 54.72                | + 8 10.4        | 2.107    | 3.046  | 7.9      | 21.1 | 9 28          | 1 56.19                | +10 2.1         | 1.759    | 2.698  | 9.2      | 19.5 |
| 10 8          | 1 48.67                | + 7 4.0         | 2.071    | 3.052  | 4.4      | 20.9 | 10 8          | 1 49.68                | + 9 15.8        | 1.712    | 2.692  | 5.2      | 19.2 |
| 10 18         | 1 41.78                | + 5 54.9        | 2.063    | 3.058  | 1.4      | 20.7 | 10 18         | 1 42.02                | + 8 24.0        | 1.691    | 2.687  | 1.0      | 18.9 |
| 10 28         | 1 34.83                | + 4 49.0        | 2.085    | 3.064  | 3.9      | 20.9 | 10 28         | 1 34.17                | + 7 32.4        | 1.699    | 2.682  | 3.8      | 19.1 |
| 11 7          | 1 28.59                | + 3 51.9        | 2.135    | 3.070  | 7.3      | 21.1 | 11 7          | 1 27.13                | + 6 47.2        | 1.734    | 2.678  | 8.0      | 19.4 |
| 11 17         | 1 23.72                | + 3 7.8         | 2.211    | 3.076  | 10.5     | 21.3 | 11 17         | 1 21.69                | + 6 13.4        | 1.794    | 2.673  | 11.8     | 19.6 |
| 11 27         | 1 20.66                | + 2 39.1        | 2.310    | 3.083  | 13.2     | 21.5 | 11 27         | 1 18.46                | + 5 54.5        | 1.876    | 2.670  | 15.0     | 19.8 |
| <b>191176</b> | 2002 NA <sub>32</sub>  |                 | 10 20.2  | 5°22   | 1°6/21.9 | 18   | <b>353562</b> | 2011 SQ <sub>228</sub> |                 | 10 20.2  | 91°53  | 2°7/22.7 | 18   |
| 9 18          | 1 55.84                | +21 23.8        | 1.600    | 2.456  | 15.3     | 17.9 | 9 18          | 2 3.58                 | +20 9.9         | 1.872    | 2.712  | 14.1     | 21.1 |
| 9 28          | 1 52.75                | +19 46.6        | 1.533    | 2.457  | 11.4     | 17.7 | 9 28          | 1 58.15                | +19 56.2        | 1.803    | 2.716  | 10.7     | 20.9 |
| 10 8          | 1 47.74                | +17 44.3        | 1.488    | 2.459  | 7.0      | 17.4 | 10 8          | 1 50.77                | +19 25.7        | 1.757    | 2.720  | 6.9      | 20.7 |
| 10 18         | 1 41.61                | +15 23.3        | 1.469    | 2.462  | 2.5      | 17.2 | 10 18         | 1 42.22                | +18 40.2        | 1.737    | 2.725  | 3.4      | 20.5 |
| 10 28         | 1 35.41                | +12 54.3        | 1.479    | 2.466  | 3.4      | 17.2 | 10 28         | 1 33.53                | +17 44.1        | 1.745    | 2.729  | 3.6      | 20.5 |
| 11 7          | 1 30.16                | +10 30.0        | 1.517    | 2.471  | 7.9      | 17.5 | 11 7          | 1 25.73                | +16 43.9        | 1.781    | 2.733  | 7.1      | 20.8 |
| 11 17         | 1 26.64                | + 8 21.5        | 1.582    | 2.478  | 12.1     | 17.8 | 11 17         | 1 19.69                | +15 46.6        | 1.843    | 2.737  | 10.8     | 21.0 |
| 11 27         | 1 25.38                | + 6 36.6        | 1.669    | 2.486  | 15.6     | 18.0 | 11 27         | 1 15.96                | +14 58.2        | 1.928    | 2.741  | 14.0     | 21.2 |
| <b>350085</b> | 2011 KF <sub>15</sub>  |                 | 10 20.2  | 49°07  | 0°5/19.8 | 18   | <b>144448</b> | 2004 EJ <sub>40</sub>  |                 | 10 20.2  | 286°82 | 3°9/16.3 | 18   |
| 9 18          | 1 59.31                | +12 36.8        | 1.373    | 2.253  | 15.8     | 20.4 | 9 18          | 2 0.22                 | + 3 39.4        | 1.836    | 2.722  | 12.2     | 20.2 |
| 9 28          | 1 57.93                | +11 42.3        | 1.329    | 2.270  | 11.4     | 20.2 | 9 28          | 1 55.73                | + 2 11.1        | 1.765    | 2.710  | 8.7      | 20.0 |
| 10 8          | 1 50.64                | +10 34.1        | 1.308    | 2.289  | 6.3      | 20.0 | 10 8          | 1 49.43                | + 0 36.6        | 1.718    | 2.697  | 5.4      | 19.8 |
| 10 18         | 1 42.14                | + 9 18.7        | 1.311    | 2.307  | 1.1      | 19.7 | 10 18         | 1 41.98                | + 0 56.3        | 1.699    | 2.684  | 4.0      | 19.7 |
| 10 28         | 1 33.70                | + 8 4.8         | 1.342    | 2.326  | 4.3      | 20.0 | 10 28         | 1 34.32                | + 2 19.3        | 1.708    | 2.672  | 6.5      | 19.8 |
| 11 7          | 1 26.55                | + 7 1.2         | 1.398    | 2.346  | 9.2      | 20.3 | 11 7          | 1 27.42                | + 3 25.2        | 1.744    | 2.659  | 10.1     | 20.0 |
| 11 17         | 1 21.53                | + 6 13.8        | 1.478    | 2.365  | 13.4     | 20.6 | 11 17         | 1 22.08                | + 4 9.4         | 1.804    | 2.647  | 13.6     | 20.2 |
| 11 27         | 1 19.16                | + 5 46.3        | 1.579    | 2.385  | 16.9     | 20.9 | 11 27         | 1 18.89                | + 4 30.1        | 1.885    | 2.634  | 16.6     | 20.4 |
| <b>316190</b> | 2010 KE <sub>129</sub> |                 | 10 20.2  | 92°17  | 0°7/19.6 | 18   | <b>215945</b> | 2005 ML <sub>15</sub>  |                 | 10 20.2  | 27°16  | 3°9/16.8 | 18   |
| 9 18          | 2 3.80                 | +11 0.3         | 1.989    | 2.853  | 12.4     | 21.5 | 9 18          | 2 1.40                 | + 2 27.4        | 1.740    | 2.627  | 12.7     | 19.9 |
| 9 28          | 1 57.94                | +10 17.5        | 1.940    | 2.874  | 8.8      | 21.3 | 9 28          | 1 56.51                | + 1 27.0        | 1.686    | 2.631  | 9.1      | 19.7 |
| 10 8          | 1 50.46                | + 9 26.2        | 1.915    | 2.894  | 4.9      | 21.1 | 10 8          | 1 49.80                | + 0 24.2        | 1.656    | 2.635  | 5.5      | 19.5 |
| 10 18         | 1 42.11                | + 8 30.7        | 1.918    | 2.914  | 0.9      | 20.9 | 10 18         | 1 42.04                | + 0 34.3        | 1.653    | 2.639  | 3.9      | 19.5 |
| 10 28         | 1 33.80                | + 7 36.5        | 1.951    | 2.934  | 3.5      | 21.1 | 10 28         | 1 34.21                | + 1 21.9        | 1.678    | 2.644  | 6.3      | 19.6 |
| 11 7          | 1 26.43                | + 6 49.1        | 2.012    | 2.953  | 7.3      | 21.4 | 11 7          | 1 27.29                | + 1 53.2        | 1.728    | 2.649  | 9.8      | 19.8 |
| 11 17         | 1 20.66                | + 6 12.8        | 2.100    | 2.972  | 10.7     | 21.7 | 11 17         | 1 22.05                | + 2 5.6         | 1.803    | 2.654  | 13.2     | 20.1 |
| 11 27         | 1 16.96                | + 5 50.4        | 2.210    | 2.991  | 13.5     | 21.9 | 11 27         | 1 19.02                | + 1 58.3        | 1.898    | 2.660  | 16.0     | 20.3 |
| <b>325539</b> | 2009 SZ <sub>56</sub>  |                 | 10 20.2  | 347°96 | 1°6/21.9 | 18   | <b>267857</b> | 2003 VU <sub>10</sub>  |                 | 10 20.2  | 14°39  | 0°9/19.4 | 18   |
| 9 18          | 1 57.48                | +19 37.7        | 1.757    | 2.612  | 14.2     | 19.6 | 9 18          | 2 0.05                 | +10 6.2         | 1.863    | 2.738  | 12.5     | 20.4 |
| 9 28          | 1 53.86                | +18 31.4        | 1.681    | 2.605  | 10.6     | 19.4 | 9 28          | 1 55.50                | + 9 30.8        | 1.802    | 2.742  | 9.0      | 20.2 |
| 10 8          | 1 48.38                | +17 4.4         | 1.628    | 2.599  | 6.5      | 19.1 | 10 8          | 1 49.23                | + 8 46.9        | 1.765    | 2.746  | 5.0      | 19.9 |
| 10 18         | 1 41.76                | +15 21.3        | 1.601    | 2.594  | 2.4      | 18.9 | 10 18         | 1 41.94                | + 7 58.7        | 1.755    | 2.750  | 1.1      | 19.7 |
| 10 28         | 1 34.97                | +13 29.7        | 1.602    | 2.589  | 3.3      | 18.9 | 10 28         | 1 34.55                | + 7 11.8        | 1.773    | 2.756  | 3.8      | 19.9 |
| 11 7          | 1 29.02                | +11 39.4        | 1.632    | 2.585  | 7.5      | 19.2 | 11 7          | 1 27.99                | + 6 31.8        | 1.818    | 2.761  | 7.8      | 20.2 |
| 11 17         | 1 24.71                | + 9 59.5        | 1.687    | 2.582  | 11.5     | 19.4 | 11 17         | 1 23.00                | + 6 3.1         | 1.888    | 2.767  | 11.4     | 20.4 |
| 11 27         | 1 22.61                | + 8 37.1        | 1.766    | 2.580  | 15.0     | 19.6 | 11 27         | 1 20.10                | + 5 48.7        | 1.981    | 2.774  | 14.4     | 20.6 |
| <b>433293</b> | 2013 CW <sub>182</sub> |                 | 10 20.2  | 98°25  | 1°7/17.1 | 18   | <b>206385</b> | 2003 RZ <sub>17</sub>  |                 | 10 20.2  | 1°65   | 2°2/18.9 | 18   |
| 9 18          | 1 54.70                | + 2 5.8         | 4.334    | 5.203  | 6.1      | 21.0 | 9 18          | 2 1.29                 | + 7 24.4        | 1.197    | 2.096  | 16.3     | 19.7 |
| 9 28          | 1 50.85                | + 1 38.1        | 4.269    | 5.206  | 4.3      | 20.9 | 9 28          | 1 57.17                | + 6 56.0        | 1.142    | 2.094  | 11.7     | 19.4 |
| 10 8          | 1 46.31                | + 1 9.9         | 4.233    | 5.209  | 2.6      | 20.8 | 10 8          | 1 50.48                | + 6 19.2        | 1.109    | 2.093  | 6.6      | 19.1 |
| 10 18         | 1 41.35                | + 0 43.3        | 4.225    | 5.211  | 1.7      | 20.7 | 10 18         | 1 42.20                | + 5 39.9        | 1.098    | 2.093  | 2.2      | 18.9 |
| 10 28         | 1 36.36                | + 0 20.5        | 4.249    | 5.214  | 2.9      | 20.8 | 10 28         | 1 33.72                | + 5 6.0         | 1.112    | 2.094  | 5.7      | 19.1 |
| 11 7          | 1 31.68                | + 0 3.4         | 4.302    | 5.217  | 4.6      | 21.0 | 11 7          | 1 26.47                | + 4 44.5        | 1.150    | 2.097  | 10.8     | 19.4 |
| 11 17         | 1 27.64                | + 0 6.7         | 4.383    | 5.220  | 6.3      | 21.1 | 11 17         | 1 21.52                | + 4 40.1        | 1.210    | 2.102  | 15.4     | 19.7 |
| 11 27         | 1 24.51                | + 0 8.9         | 4.489    | 5.222  | 7.8      | 21.2 | 11 27         | 1 19.54                | + 4 54.9        | 1.289    | 2.107  | 19.3     | 19.9 |
| <b>25504</b>  | 1999 XS <sub>94</sub>  |                 | 10 20.2  | 248°90 | 9°1/ 8.4 | 18   | <b>242279</b> | 2003 UK <sub>90</sub>  |                 | 10 20.2  | 234°20 | 0°4/19.8 | 18   |
| 9 18          | 2 1.91                 | -21 8.7         | 2.549    | 3.389  | 10.8     | 18.9 | 9 18          | 2 1.11                 | +10 43.4        | 2.556    | 3.415  | 10.1     | 21.5 |
| 9 28          | 1 56.50                | -22 25.3        | 2.502    | 3.378  | 9.6      | 18.8 | 9 28          | 1 55.95                | +10 16.2        | 2.476    | 3.407  | 7.3      | 21.3 |
| 10 8          | 1 49.66                | -23 28.1        | 2.479    | 3.367  | 9.1      | 18.7 | 10 8          | 1 49.39                | + 9 42.0        | 2.422    | 3.400  | 4.1      | 21.0 |
| 10 18         | 1 41.98                | -24 11.0        | 2.481    | 3.355  | 9.5      | 18.7 | 10 18         | 1 41.98                | + 9 3.5         | 2.396    | 3.392  | 0.8      | 20.8 |
| 10 28         | 1 34.21                | -24 29.9        | 2.509    | 3.343  | 10.7     | 18.8 | 10 28         | 1 34.41                | + 8 24.5        | 2.400    | 3.384  | 2.9      | 20.9 |
| 11 7          | 1 27.09                | -24 23.2        | 2.559    | 3.331  | 12.2     | 18.9 | 11 7          | 1 27.41                | + 7 49.0        | 2.434    | 3.375  | 6.2      | 21.2 |
| 11 17         | 1 21.27                | -23 51.9        | 2.629    | 3.319  | 13.8     | 19.0 | 11 17         | 1 21.59                | + 7 20.8        | 2.496    | 3.367  | 9.3      | 21.3 |
| 11 27         | 1 17.21                | -22 58.7        | 2.717    | 3.306  | 15.2     | 19.1 | 11 27         | 1 17.44                | + 7 2.6         | 2.581    | 3.358  | 11.9     | 21.5 |
| <b>37101</b>  | 2000 UO <sub>96</sub>  |                 | 10 20.2  | 81°03  | 3°1/22.4 | 18   | <b>467834</b> | 2010 RU <sub>154</sub> |                 | 10 20.2  | 73°68  | 1°5/19.3 | 17   |
| 9 18          | 2 8.94                 | +19 15.6        | 1.332    | 2.187  | 17.8     | 18.7 | 9 18          | 2 9.11                 | + 8 57.5        | 1.240    | 2.123  | 17.0     | 21.3 |
| 9 28          | 2 2.43                 | +19 11.4        | 1.283    | 2.205  | 13.4     | 18.4 | 9 28          | 2 2.48                 | + 8 28.5        | 1.199    | 2.142  | 12.1     | 21.1 |
| 10 8          | 1 53.29                | +18 46.6        | 1.254    | 2.222  | 8.5      | 18.2 | 10 8          | 1 53.29                | + 7 50.0        | 1.179    | 2.160  | 6.7      | 20.8 |
| 10 18         | 1 42.66                | +18 3.4         | 1.250    | 2.239  | 3.9      | 18.0 | 10 18         | 1 42.68                | + 7 7.7         | 1.184    | 2.179  | 1.7      | 20.6 |
| 10 28         | 1 32.04                | +17 7.8         | 1.271    | 2.256  | 4.4      | 18.1 | 10 28         | 1 32.19                | + 6 29.1        | 1.215    | 2.197  | 5.1      | 20.9 |
| 11 7          | 1 22.88                | +16 8.8         | 1.319    | 2.273  | 8.9      | 18.4 | 11 7          | 1 23.24                | + 6 1.1         | 1.271    | 2.216  | 10.2     | 21.2 |
| 11 17         | 1 16.24                | +15 15.1        | 1.392    | 2.290  | 13.3     | 18.7 | 11 17         | 1 16.83                | + 5 48.3        | 1.351    | 2.234  | 14.7     | 21.5 |
| 11 27         | 1 12.70                | +14 33.9        | 1.485    | 2.307  | 17.0     | 19.0 | 11 27         | 1 13.49                | + 5 53.0        | 1.450    | 2.252  | 18.3     | 21.8 |
| <b>331167</b> | 2011 AA <sub>3</sub>   |                 | 10 20.2  | 230°32 | 8°7/ 7.3 | 18   | <b>256584</b> | 2007 TW <sub>330</sub> |                 | 10 20.2  | 144°98 | 0°9/20.8 | 18   |
| 9 18          | 1 59.87                | -19 55.1        | 2.650</  |        |          |      |               |                        |                 |          |        |          |      |

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10 20.2

10 20.3

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$     | $\beta$   | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$     | $\beta$   | $V$  |
|---------------|-------------------------------|-----------------|----------|---------|-----------|------|---------------|-------------------------------|-----------------|----------|---------|-----------|------|
| <b>395569</b> | 2011 <i>UZ</i> <sub>244</sub> |                 | 10 20.2  | 31°32'  | 1.2°/21.4 | 18   | <b>393215</b> | 2013 <i>EO</i> <sub>15</sub>  |                 | 10 20.3  | 9°80'   | 4.0°/26.5 | 15   |
| 9 18          | 2 1.88                        | +16 36.2        | 1.777    | 2.634   | 13.9      | 20.7 | 9 18          | 2 0.52                        | +30 33.4        | 4.052    | 4.803   | 8.7       | 20.4 |
| 9 28          | 1 56.97                       | +16 1.1         | 1.710    | 2.637   | 10.3      | 20.5 | 9 28          | 1 55.26                       | +31 2.5         | 3.965    | 4.804   | 7.2       | 20.3 |
| 10 8          | 1 50.13                       | +15 10.6        | 1.666    | 2.639   | 6.2       | 20.3 | 10 8          | 1 48.93                       | +31 20.5        | 3.902    | 4.805   | 5.7       | 20.2 |
| 10 18         | 1 42.14                       | +14 8.3         | 1.648    | 2.642   | 2.0       | 20.0 | 10 18         | 1 41.94                       | +31 26.7        | 3.867    | 4.806   | 4.4       | 20.1 |
| 10 28         | 1 34.02                       | +13 0.2         | 1.659    | 2.645   | 3.3       | 20.1 | 10 28         | 1 34.79                       | +31 21.8        | 3.861    | 4.807   | 4.0       | 20.1 |
| 11 7          | 1 26.80                       | +11 53.4        | 1.697    | 2.648   | 7.5       | 20.4 | 11 7          | 1 28.00                       | +31 7.6         | 3.884    | 4.808   | 4.8       | 20.2 |
| 11 17         | 1 21.31                       | +10 54.9        | 1.761    | 2.651   | 11.4      | 20.6 | 11 17         | 1 22.05                       | +30 46.5        | 3.936    | 4.809   | 6.1       | 20.3 |
| 11 27         | 1 18.13                       | +10 9.8         | 1.847    | 2.655   | 14.7      | 20.9 | 11 27         | 1 17.33                       | +30 21.9        | 4.014    | 4.811   | 7.6       | 20.4 |
| <b>231618</b> | 2009 <i>SF</i> <sub>104</sub> |                 | 10 20.2  | 65°71'  | 2°8/18.4  | 16   | <b>267787</b> | 2003 <i>ST</i> <sub>182</sub> |                 | 10 20.3  | 297°57' | 0°9/21.3  | 18   |
| 9 18          | 2 8.41                        | + 6 8.3         | 1.300    | 2.186   | 16.2      | 20.6 | 9 18          | 1 58.99                       | +17 21.5        | 2.193    | 3.042   | 11.9      | 19.8 |
| 9 28          | 2 1.73                        | + 5 24.1        | 1.268    | 2.213   | 11.4      | 20.4 | 9 28          | 1 54.68                       | +16 22.0        | 2.107    | 3.030   | 8.8       | 19.6 |
| 10 8          | 1 52.75                       | + 4 34.6        | 1.258    | 2.240   | 6.4       | 20.2 | 10 8          | 1 48.80                       | +15 7.2         | 2.046    | 3.019   | 5.3       | 19.4 |
| 10 18         | 1 42.59                       | + 3 46.6        | 1.273    | 2.266   | 2.8       | 20.1 | 10 18         | 1 41.93                       | +13 40.7        | 2.013    | 3.007   | 1.6       | 19.1 |
| 10 28         | 1 32.68                       | + 3 7.4         | 1.315    | 2.293   | 5.8       | 20.4 | 10 28         | 1 34.88                       | +12 8.5         | 2.009    | 2.995   | 2.8       | 19.2 |
| 11 7          | 1 24.29                       | + 2 43.0        | 1.382    | 2.319   | 10.4      | 20.7 | 11 7          | 1 28.48                       | +10 37.6        | 2.035    | 2.984   | 6.6       | 19.4 |
| 11 17         | 1 18.29                       | + 2 36.3        | 1.473    | 2.346   | 14.4      | 21.0 | 11 17         | 1 23.44                       | + 9 14.8        | 2.088    | 2.973   | 10.2      | 19.6 |
| 11 27         | 1 15.14                       | + 2 48.0        | 1.584    | 2.372   | 17.6      | 21.3 | 11 27         | 1 20.28                       | + 8 5.8         | 2.165    | 2.962   | 13.2      | 19.8 |
| <b>189808</b> | 2002 <i>KU</i> <sub>14</sub>  |                 | 10 20.2  | 142°90' | 5°5/13.2  | 18   | <b>330525</b> | 2007 <i>TH</i> <sub>234</sub> |                 | 10 20.3  | 269°11' | 6°8/16.9  | 17   |
| 9 18          | 2 0.33                        | - 7 51.2        | 2.701    | 3.573   | 9.2       | 20.6 | 9 18          | 2 16.27                       | - 6 4.3         | 1.531    | 2.400   | 15.1      | 20.9 |
| 9 28          | 1 55.19                       | - 9 5.7         | 2.657    | 3.582   | 7.2       | 20.5 | 9 28          | 2 7.94                        | - 6 17.4        | 1.449    | 2.378   | 11.6      | 20.6 |
| 10 8          | 1 48.87                       | -10 14.9        | 2.640    | 3.590   | 5.7       | 20.4 | 10 8          | 1 56.70                       | - 6 22.2        | 1.390    | 2.355   | 8.2       | 20.3 |
| 10 18         | 1 41.90                       | -11 13.6        | 2.651    | 3.599   | 5.7       | 20.5 | 10 18         | 1 43.45                       | - 6 11.9        | 1.358    | 2.331   | 6.8       | 20.2 |
| 10 28         | 1 34.90                       | -11 57.3        | 2.690    | 3.607   | 7.1       | 20.6 | 10 28         | 1 29.64                       | - 5 41.0        | 1.353    | 2.307   | 9.0       | 20.3 |
| 11 7          | 1 28.52                       | -12 23.3        | 2.757    | 3.614   | 9.0       | 20.7 | 11 7          | 1 16.83                       | - 4 47.3        | 1.376    | 2.283   | 12.9      | 20.4 |
| 11 17         | 1 23.28                       | -12 30.9        | 2.847    | 3.621   | 11.0      | 20.9 | 11 17         | 1 6.35                        | - 3 32.1        | 1.423    | 2.258   | 17.0      | 20.6 |
| 11 27         | 1 19.56                       | -12 20.8        | 2.959    | 3.628   | 12.7      | 21.0 | 11 27         | 0 59.07                       | - 1 58.5        | 1.490    | 2.232   | 20.5      | 20.8 |
| <b>482655</b> | 2013 <i>BH</i> <sub>56</sub>  |                 | 10 20.2  | 284°08' | 4°9/15.9  | 18   | <b>166211</b> | 2002 <i>EP</i> <sub>135</sub> |                 | 10 20.3  | 240°50' | 1°3/17.8  | 18   |
| 9 18          | 2 2.37                        | - 0 20.7        | 1.791    | 2.678   | 12.4      | 21.3 | 9 18          | 1 54.04                       | + 4 52.4        | 4.372    | 5.239   | 6.1       | 20.1 |
| 9 28          | 1 57.27                       | - 1 26.7        | 1.729    | 2.671   | 9.1       | 21.1 | 9 28          | 1 50.43                       | + 4 18.7        | 4.302    | 5.239   | 4.3       | 19.9 |
| 10 8          | 1 50.30                       | - 2 33.1        | 1.691    | 2.665   | 6.0       | 20.9 | 10 8          | 1 46.13                       | + 3 43.3        | 4.260    | 5.238   | 2.5       | 19.8 |
| 10 18         | 1 42.18                       | - 3 33.2        | 1.679    | 2.658   | 5.0       | 20.9 | 10 18         | 1 41.42                       | + 3 8.3         | 4.247    | 5.238   | 1.3       | 19.7 |
| 10 28         | 1 33.91                       | - 4 19.7        | 1.695    | 2.652   | 7.2       | 21.0 | 10 28         | 1 36.65                       | + 2 35.9        | 4.266    | 5.237   | 2.5       | 19.8 |
| 11 7          | 1 26.47                       | - 4 47.7        | 1.737    | 2.645   | 10.6      | 21.2 | 11 7          | 1 32.19                       | + 2 8.3         | 4.314    | 5.237   | 4.3       | 20.0 |
| 11 17         | 1 20.70                       | - 4 54.6        | 1.802    | 2.639   | 13.9      | 21.4 | 11 17         | 1 28.35                       | + 1 47.2        | 4.390    | 5.236   | 6.1       | 20.1 |
| 11 27         | 1 17.15                       | - 4 40.3        | 1.887    | 2.633   | 16.7      | 21.6 | 11 27         | 1 25.39                       | + 1 33.8        | 4.492    | 5.236   | 7.7       | 20.2 |
| <b>179222</b> | 2001 <i>TT</i> <sub>256</sub> |                 | 10 20.2  | 354°58' | 0°5/20.7  | 18   | <b>304344</b> | 2006 <i>SK</i> <sub>263</sub> |                 | 10 20.3  | 234°73' | 2°2/22.8  | 18   |
| 9 18          | 2 1.87                        | +13 52.0        | 1.707    | 2.574   | 13.9      | 20.6 | 9 18          | 2 2.67                        | +20 52.7        | 2.575    | 3.397   | 11.2      | 21.1 |
| 9 28          | 1 57.06                       | +13 27.8        | 1.639    | 2.572   | 10.2      | 20.4 | 9 28          | 1 57.20                       | +20 24.2        | 2.479    | 3.382   | 8.6       | 20.9 |
| 10 8          | 1 50.24                       | +12 50.8        | 1.593    | 2.571   | 5.9       | 20.1 | 10 8          | 1 50.18                       | +19 41.4        | 2.407    | 3.367   | 5.6       | 20.7 |
| 10 18         | 1 42.18                       | +12 4.5         | 1.574    | 2.569   | 1.4       | 19.8 | 10 18         | 1 42.19                       | +18 45.5        | 2.364    | 3.350   | 2.8       | 20.5 |
| 10 28         | 1 33.93                       | +11 14.4        | 1.582    | 2.568   | 3.5       | 20.0 | 10 28         | 1 33.98                       | +17 40.3        | 2.350    | 3.334   | 2.9       | 20.5 |
| 11 7          | 1 26.58                       | +10 27.0        | 1.618    | 2.568   | 7.9       | 20.3 | 11 7          | 1 26.33                       | +16 30.8        | 2.367    | 3.316   | 5.8       | 20.6 |
| 11 17         | 1 20.99                       | + 9 48.3        | 1.678    | 2.568   | 11.9      | 20.5 | 11 17         | 1 19.93                       | +15 22.7        | 2.412    | 3.298   | 8.9       | 20.8 |
| 11 27         | 1 17.78                       | + 9 22.8        | 1.761    | 2.568   | 15.3      | 20.7 | 11 27         | 1 15.33                       | +14 21.5        | 2.483    | 3.280   | 11.7      | 21.0 |
| <b>48907</b>  | 1998 <i>MX</i> <sub>36</sub>  |                 | 10 20.2  | 58°27'  | 4°4/23.4  | 18   | <b>239375</b> | 2007 <i>RA</i> <sub>286</sub> |                 | 10 20.3  | 76°77'  | 1°0/21.1  | 18   |
| 9 18          | 2 7.18                        | +21 55.0        | 1.329    | 2.178   | 18.2      | 18.6 | 9 18          | 2 3.91                        | +15 36.2        | 1.712    | 2.571   | 14.3      | 21.3 |
| 9 28          | 2 1.31                        | +22 2.7         | 1.276    | 2.191   | 14.0      | 18.4 | 9 28          | 1 58.41                       | +15 5.5         | 1.654    | 2.582   | 10.5      | 21.1 |
| 10 8          | 1 52.77                       | +21 47.4        | 1.243    | 2.205   | 9.4       | 18.2 | 10 8          | 1 50.94                       | +14 20.6        | 1.619    | 2.594   | 6.2       | 20.9 |
| 10 18         | 1 42.64                       | +21 9.8         | 1.234    | 2.218   | 5.3       | 18.0 | 10 18         | 1 42.33                       | +13 25.1        | 1.611    | 2.605   | 1.8       | 20.6 |
| 10 28         | 1 32.44                       | +20 15.3        | 1.250    | 2.232   | 5.1       | 18.1 | 10 28         | 1 33.67                       | +12 25.0        | 1.631    | 2.617   | 3.4       | 20.8 |
| 11 7          | 1 23.63                       | +19 12.7        | 1.292    | 2.247   | 8.9       | 18.3 | 11 7          | 1 26.03                       | +11 27.2        | 1.678    | 2.628   | 7.7       | 21.1 |
| 11 17         | 1 17.32                       | +18 11.8        | 1.357    | 2.261   | 13.2      | 18.6 | 11 17         | 1 20.24                       | +10 38.2        | 1.751    | 2.640   | 11.6      | 21.3 |
| 11 27         | 1 14.13                       | +17 21.0        | 1.444    | 2.276   | 16.9      | 18.9 | 11 27         | 1 16.84                       | +10 2.6         | 1.846    | 2.651   | 14.8      | 21.6 |
| <b>331165</b> | 2010 <i>YQ</i> <sub>3</sub>   |                 | 10 20.2  | 292°17' | 8°8/10.6  | 18   | <b>494290</b> | 2016 <i>RJ</i> <sub>21</sub>  |                 | 10 20.3  | 339°76' | 0°3/20.5  | 18   |
| 9 18          | 2 2.00                        | -15 53.7        | 2.173    | 3.035   | 11.5      | 20.5 | 9 18          | 2 0.76                        | +14 17.0        | 1.289    | 2.172   | 16.5      | 20.6 |
| 9 28          | 1 56.82                       | -17 8.0         | 2.114    | 3.018   | 9.8       | 20.4 | 9 28          | 1 56.83                       | +13 34.1        | 1.222    | 2.164   | 12.1      | 20.3 |
| 10 8          | 1 49.98                       | -18 10.8        | 2.080    | 3.001   | 8.9       | 20.3 | 10 8          | 1 50.36                       | +12 32.9        | 1.176    | 2.156   | 7.0       | 20.0 |
| 10 18         | 1 42.13                       | -18 55.1        | 2.071    | 2.984   | 9.2       | 20.3 | 10 18         | 1 42.26                       | +11 18.4        | 1.153    | 2.148   | 1.4       | 19.7 |
| 10 28         | 1 34.12                       | -19 15.4        | 2.088    | 2.967   | 10.7      | 20.3 | 10 28         | 1 33.86                       | + 9 59.4        | 1.156    | 2.142   | 4.3       | 19.9 |
| 11 7          | 1 26.81                       | -19 9.2         | 2.128    | 2.951   | 12.7      | 20.4 | 11 7          | 1 26.55                       | + 8 46.3        | 1.183    | 2.137   | 9.8       | 20.2 |
| 11 17         | 1 20.94                       | -18 37.2        | 2.190    | 2.934   | 14.8      | 20.6 | 11 17         | 1 21.45                       | + 7 47.8        | 1.234    | 2.132   | 14.7      | 20.4 |
| 11 27         | 1 17.04                       | -17 41.8        | 2.269    | 2.917   | 16.6      | 20.7 | 11 27         | 1 19.27                       | + 7 10.0        | 1.304    | 2.128   | 18.8      | 20.7 |
| <b>378026</b> | 2006 <i>SQ</i> <sub>324</sub> |                 | 10 20.3  | 305°16' | 2°1/18.4  | 18   | <b>395409</b> | 2011 <i>SC</i> <sub>149</sub> |                 | 10 20.3  | 133°30' | 1°6/21.6  | 18   |
| 9 18          | 2 1.66                        | + 7 23.1        | 1.847    | 2.726   | 12.5      | 21.4 | 9 18          | 2 4.80                        | +16 10.2        | 1.843    | 2.696   | 13.7      | 21.6 |
| 9 28          | 1 56.73                       | + 6 32.0        | 1.780    | 2.722   | 8.9       | 21.1 | 9 28          | 1 59.09                       | +16 3.6         | 1.773    | 2.696   | 10.2      | 21.4 |
| 10 8          | 1 49.99                       | + 5 33.7        | 1.737    | 2.718   | 5.0       | 20.9 | 10 8          | 1 51.38                       | +15 43.7        | 1.725    | 2.697   | 6.2       | 21.1 |
| 10 18         | 1 42.14                       | + 4 33.4        | 1.720    | 2.714   | 2.1       | 20.7 | 10 18         | 1 42.44                       | +15 12.5        | 1.705    | 2.697   | 2.3       | 20.9 |
| 10 28         | 1 34.13                       | + 3 37.6        | 1.732    | 2.710   | 4.7       | 20.9 | 10 28         | 1 33.30                       | +14 34.2        | 1.712    | 2.698   | 3.3       | 20.9 |
| 11 7          | 1 26.92                       | + 2 52.3        | 1.771    | 2.706   | 8.7       | 21.1 | 11 7          | 1 25.04                       | +13 54.4        | 1.747    | 2.698   | 7.4       | 21.2 |
| 11 17         | 1 21.33                       | + 2 22.0        | 1.836    | 2.702   | 12.3      | 21.3 | 11 17         | 1 18.53                       | +13 19.0        | 1.809    | 2.699   | 11.2      | 21.4 |
| 11 27         | 1 17.90                       | + 2 9.0         | 1.922    | 2.698   | 15.4      | 21.5 | 11 27         | 1 14.39                       | +12 52.8        | 1.893    | 2.699   | 14.5      | 21.7 |
| <b>386083</b> | 2007 <i>LL</i> <sub>12</sub>  |                 | 10 20.3  | 258°41' | 2°4/18.4  | 18   | <b>372877</b> | 2010 <i>WS</i> <sub>61</sub>  |                 |          |         |           |      |



EPHEMERIDES

10 20.3

10 20.3

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$            | $\Delta$ | $r$   | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$            | $\Delta$ | $r$   | $\beta$ | $V$  |
|---------------|-------------------------------|----------------------------|----------|-------|---------|------|---------------|-------------------------------|----------------------------|----------|-------|---------|------|
| <b>298138</b> | 2002 <i>RH</i> <sub>280</sub> | 10 20.3 350°67 0°8/19.5 18 |          |       |         |      | <b>452438</b> | 2003 <i>QG</i> <sub>2</sub>   | 10 20.3 9°89 14°6/ 7.9 16  |          |       |         |      |
| 9 18          | 2 0.90                        | +11 41.4                   | 1.601    | 2.479 | 14.1    | 20.3 | 9 18          | 1 59.01                       | +49 24.0                   | 1.478    | 2.172 | 23.4    | 18.9 |
| 9 28          | 1 56.44                       | +10 47.0                   | 1.536    | 2.476 | 10.2    | 20.1 | 9 28          | 1 56.19                       | +50 16.2                   | 1.418    | 2.178 | 21.4    | 18.8 |
| 10 8          | 1 49.93                       | +9 39.8                    | 1.493    | 2.474 | 5.7     | 19.8 | 10 8          | 1 50.23                       | +50 26.7                   | 1.371    | 2.186 | 19.2    | 18.7 |
| 10 18         | 1 42.17                       | +8 25.3                    | 1.477    | 2.472 | 1.1     | 19.5 | 10 18         | 1 42.27                       | +49 49.6                   | 1.340    | 2.196 | 17.1    | 18.5 |
| 10 28         | 1 34.24                       | +7 11.3                    | 1.487    | 2.471 | 4.2     | 19.7 | 10 28         | 1 34.07                       | +48 23.9                   | 1.326    | 2.208 | 15.4    | 18.5 |
| 11 7          | 1 27.25                       | +6 5.8                     | 1.525    | 2.470 | 8.8     | 20.0 | 11 7          | 1 27.41                       | +46 16.2                   | 1.333    | 2.222 | 14.6    | 18.5 |
| 11 17         | 1 22.07                       | +5 15.2                    | 1.587    | 2.469 | 12.9    | 20.2 | 11 17         | 1 23.58                       | +43 39.2                   | 1.361    | 2.237 | 15.1    | 18.6 |
| 11 27         | 1 19.32                       | +4 43.6                    | 1.670    | 2.469 | 16.4    | 20.5 | 11 27         | 1 23.22                       | +40 49.1                   | 1.412    | 2.254 | 16.6    | 18.7 |
| <b>317346</b> | 2002 <i>KK</i> <sub>15</sub>  | 10 20.3 193°79 4°5/15.2 18 |          |       |         |      | <b>330144</b> | 2006 <i>AM</i> <sub>6</sub>   | 10 20.3 258°67 4°4/15.3 18 |          |       |         |      |
| 9 18          | 2 3.17                        | -5 48.4                    | 2.852    | 3.718 | 9.0     | 22.3 | 9 18          | 2 1.92                        | -3 23.3                    | 2.629    | 3.501 | 9.4     | 21.2 |
| 9 28          | 1 57.23                       | -6 26.8                    | 2.789    | 3.716 | 6.8     | 22.2 | 9 28          | 1 56.55                       | -4 13.5                    | 2.548    | 3.480 | 7.1     | 21.1 |
| 10 8          | 1 50.06                       | -7 1.3                     | 2.754    | 3.713 | 5.0     | 22.1 | 10 8          | 1 49.80                       | -5 2.1                     | 2.494    | 3.460 | 5.0     | 20.9 |
| 10 18         | 1 42.18                       | -7 28.0                    | 2.747    | 3.710 | 4.6     | 22.0 | 10 18         | 1 42.17                       | -5 44.6                    | 2.468    | 3.438 | 4.5     | 20.8 |
| 10 28         | 1 34.23                       | -7 43.3                    | 2.769    | 3.706 | 5.9     | 22.1 | 10 28         | 1 34.34                       | -6 16.4                    | 2.472    | 3.417 | 6.1     | 20.9 |
| 11 7          | 1 26.84                       | -7 45.1                    | 2.820    | 3.702 | 8.0     | 22.3 | 11 7          | 1 27.01                       | -6 34.1                    | 2.503    | 3.394 | 8.5     | 21.0 |
| 11 17         | 1 20.57                       | -7 32.5                    | 2.898    | 3.697 | 10.2    | 22.4 | 11 17         | 1 20.82                       | -6 35.9                    | 2.561    | 3.372 | 11.0    | 21.2 |
| 11 27         | 1 15.84                       | -7 5.8                     | 2.997    | 3.692 | 12.1    | 22.5 | 11 27         | 1 16.26                       | -6 21.4                    | 2.640    | 3.349 | 13.3    | 21.3 |
| <b>304488</b> | 2006 <i>UR</i> <sub>113</sub> | 10 20.3 116°68 0°2/20.4 18 |          |       |         |      | <b>297312</b> | 1998 <i>WW</i> <sub>3</sub>   | 10 20.3 0°20 9°8/16.1 16   |          |       |         |      |
| 9 18          | 2 4.27                        | +12 13.1                   | 1.967    | 2.828 | 12.6    | 21.3 | 9 18          | 2 6.17                        | -10 28.9                   | 1.098    | 1.997 | 17.5    | 19.1 |
| 9 28          | 1 58.54                       | +11 57.2                   | 1.901    | 2.832 | 9.1     | 21.1 | 9 28          | 2 0.82                        | -10 44.1                   | 1.053    | 1.992 | 13.9    | 18.9 |
| 10 8          | 1 50.99                       | +11 31.9                   | 1.858    | 2.835 | 5.2     | 20.8 | 10 8          | 1 52.62                       | -10 42.4                   | 1.027    | 1.989 | 10.8    | 18.7 |
| 10 18         | 1 42.37                       | +11 0.0                    | 1.843    | 2.838 | 1.0     | 20.5 | 10 18         | 1 42.70                       | -10 15.5                   | 1.023    | 1.988 | 9.9     | 18.7 |
| 10 28         | 1 33.60                       | +10 25.9                   | 1.856    | 2.841 | 3.2     | 20.7 | 10 28         | 1 32.70                       | -9 18.5                    | 1.041    | 1.990 | 11.8    | 18.8 |
| 11 7          | 1 25.67                       | +9 54.5                    | 1.898    | 2.844 | 7.3     | 21.0 | 11 7          | 1 24.20                       | -7 52.3                    | 1.082    | 1.993 | 15.3    | 19.0 |
| 11 17         | 1 19.36                       | +9 30.4                    | 1.966    | 2.847 | 10.9    | 21.2 | 11 17         | 1 18.35                       | -6 1.7                     | 1.143    | 1.998 | 18.9    | 19.3 |
| 11 27         | 1 15.22                       | +9 17.1                    | 2.057    | 2.850 | 13.9    | 21.4 | 11 27         | 1 15.77                       | -3 53.1                    | 1.221    | 2.005 | 22.1    | 19.5 |
| <b>91285</b>  | 1999 <i>FP</i> <sub>9</sub>   | 10 20.3 265°70 4°5/16.0 18 |          |       |         |      | <b>67259</b>  | 2000 <i>EA</i> <sub>121</sub> | 10 20.3 68°78 4°1/24.0 18  |          |       |         |      |
| 9 18          | 2 2.41                        | +2 58.6                    | 1.698    | 2.584 | 13.0    | 19.1 | 9 18          | 2 5.74                        | +23 30.6                   | 2.274    | 3.085 | 12.9    | 18.7 |
| 9 28          | 1 57.51                       | +1 24.8                    | 1.624    | 2.569 | 9.4     | 18.8 | 9 28          | 1 59.55                       | +23 59.4                   | 2.203    | 3.093 | 10.1    | 18.5 |
| 10 8          | 1 50.57                       | -0 15.5                    | 1.575    | 2.552 | 5.9     | 18.6 | 10 8          | 1 51.58                       | +24 13.5                   | 2.155    | 3.100 | 7.2     | 18.4 |
| 10 18         | 1 42.31                       | -1 54.0                    | 1.552    | 2.536 | 4.6     | 18.5 | 10 18         | 1 42.51                       | +24 12.2                   | 2.134    | 3.107 | 4.7     | 18.2 |
| 10 28         | 1 33.76                       | -3 21.1                    | 1.558    | 2.519 | 7.3     | 18.6 | 10 28         | 1 33.25                       | +23 57.3                   | 2.141    | 3.115 | 4.4     | 18.2 |
| 11 7          | 1 26.02                       | -4 28.7                    | 1.590    | 2.502 | 11.1    | 18.8 | 11 7          | 1 24.74                       | +23 32.4                   | 2.177    | 3.122 | 6.6     | 18.4 |
| 11 17         | 1 20.01                       | -5 11.9                    | 1.645    | 2.484 | 14.8    | 19.0 | 11 17         | 1 17.77                       | +23 2.7                    | 2.241    | 3.130 | 9.4     | 18.6 |
| 11 27         | 1 16.37                       | -5 29.3                    | 1.720    | 2.467 | 18.0    | 19.2 | 11 27         | 1 12.92                       | +22 33.6                   | 2.329    | 3.137 | 12.0    | 18.7 |
| <b>22817</b>  | Shankar                       | 10 20.3 29°82 2°5/18.3 18  |          |       |         |      | <b>472365</b> | 2015 <i>BZ</i> <sub>32</sub>  | 10 20.3 120°67 5°3/16.5 17 |          |       |         |      |
| 9 18          | 2 1.83                        | +7 50.0                    | 1.440    | 2.329 | 14.7    | 18.4 | 9 18          | 2 7.34                        | -0 8.9                     | 1.469    | 2.355 | 14.6    | 21.2 |
| 9 28          | 1 57.15                       | +6 46.9                    | 1.388    | 2.335 | 10.5    | 18.1 | 9 28          | 2 1.04                        | -1 10.3                    | 1.421    | 2.363 | 10.6    | 21.0 |
| 10 8          | 1 50.32                       | +5 35.0                    | 1.359    | 2.341 | 5.8     | 17.9 | 10 8          | 1 52.49                       | -2 11.1                    | 1.396    | 2.371 | 6.9     | 20.8 |
| 10 18         | 1 42.24                       | +4 21.3                    | 1.355    | 2.348 | 2.5     | 17.7 | 10 18         | 1 42.67                       | -3 3.5                     | 1.397    | 2.379 | 5.4     | 20.7 |
| 10 28         | 1 34.09                       | +3 14.7                    | 1.378    | 2.356 | 5.5     | 17.9 | 10 28         | 1 32.83                       | -3 39.9                    | 1.425    | 2.386 | 7.8     | 20.9 |
| 11 7          | 1 27.05                       | +2 22.7                    | 1.426    | 2.364 | 10.0    | 18.2 | 11 7          | 1 24.20                       | -3 55.4                    | 1.478    | 2.393 | 11.6    | 21.2 |
| 11 17         | 1 22.00                       | +1 50.2                    | 1.498    | 2.372 | 14.1    | 18.5 | 11 17         | 1 17.71                       | -3 48.4                    | 1.554    | 2.399 | 15.3    | 21.4 |
| 11 27         | 1 19.51                       | +1 39.1                    | 1.589    | 2.381 | 17.4    | 18.7 | 11 27         | 1 13.93                       | -3 19.9                    | 1.649    | 2.406 | 18.3    | 21.6 |
| <b>512228</b> | 2015 <i>UQ</i> <sub>43</sub>  | 10 20.3 48°19 6°0/15.5 18  |          |       |         |      | <b>382836</b> | 2004 <i>BQ</i> <sub>30</sub>  | 10 20.3 144°31 6°3/13.1 18 |          |       |         |      |
| 9 18          | 2 3.64                        | -4 32.1                    | 1.738    | 2.623 | 12.8    | 19.8 | 9 18          | 2 2.84                        | -9 12.6                    | 2.417    | 3.287 | 10.3    | 21.2 |
| 9 28          | 1 57.98                       | -5 24.9                    | 1.704    | 2.641 | 9.5     | 19.7 | 9 28          | 1 57.11                       | -10 28.4                   | 2.376    | 3.297 | 8.1     | 21.0 |
| 10 8          | 1 50.58                       | -6 12.0                    | 1.693    | 2.660 | 6.8     | 19.6 | 10 8          | 1 50.03                       | -11 37.2                   | 2.361    | 3.307 | 6.6     | 21.0 |
| 10 18         | 1 42.27                       | -6 47.0                    | 1.709    | 2.679 | 6.1     | 19.6 | 10 18         | 1 42.20                       | -12 33.1                   | 2.373    | 3.317 | 6.5     | 21.0 |
| 10 28         | 1 34.06                       | -7 4.6                     | 1.752    | 2.699 | 7.9     | 19.7 | 10 28         | 1 34.37                       | -13 11.4                   | 2.414    | 3.326 | 8.0     | 21.1 |
| 11 7          | 1 26.90                       | -7 2.2                     | 1.820    | 2.718 | 10.8    | 20.0 | 11 7          | 1 27.28                       | -13 29.4                   | 2.481    | 3.334 | 10.1    | 21.2 |
| 11 17         | 1 21.50                       | -6 39.9                    | 1.912    | 2.738 | 13.6    | 20.2 | 11 17         | 1 21.51                       | -13 27.0                   | 2.572    | 3.342 | 12.1    | 21.4 |
| 11 27         | 1 18.31                       | -5 59.3                    | 2.023    | 2.758 | 16.0    | 20.4 | 11 27         | 1 17.48                       | -13 5.3                    | 2.682    | 3.349 | 13.9    | 21.6 |
| <b>150417</b> | 2000 <i>FX</i> <sub>56</sub>  | 10 20.3 145°84 3°5/17.6 18 |          |       |         |      | <b>361047</b> | 2005 <i>YX</i> <sub>4</sub>   | 10 20.3 29°58 1°1/21.2 17  |          |       |         |      |
| 9 18          | 2 6.84                        | +2 54.3                    | 1.703    | 2.582 | 13.3    | 20.1 | 9 18          | 2 2.66                        | +14 54.2                   | 1.825    | 2.686 | 13.5    | 21.1 |
| 9 28          | 2 0.49                        | +2 10.8                    | 1.647    | 2.588 | 9.6     | 19.9 | 9 28          | 1 57.50                       | +14 42.1                   | 1.763    | 2.692 | 9.9     | 20.9 |
| 10 8          | 1 52.13                       | +1 24.9                    | 1.615    | 2.593 | 5.7     | 19.7 | 10 8          | 1 50.46                       | +14 17.9                   | 1.724    | 2.698 | 5.9     | 20.7 |
| 10 18         | 1 42.59                       | +0 42.4                    | 1.610    | 2.599 | 3.5     | 19.5 | 10 18         | 1 42.30                       | +13 44.2                   | 1.711    | 2.705 | 1.8     | 20.4 |
| 10 28         | 1 32.98                       | +0 9.5                     | 1.633    | 2.603 | 6.0     | 19.7 | 10 28         | 1 34.02                       | +13 5.4                    | 1.726    | 2.712 | 3.2     | 20.6 |
| 11 7          | 1 24.39                       | -0 0.1                     | 1.683    | 2.608 | 9.8     | 20.0 | 11 7          | 1 26.63                       | +12 27.2                   | 1.768    | 2.719 | 7.3     | 20.8 |
| 11 17         | 1 17.69                       | -0 10.7                    | 1.758    | 2.612 | 13.4    | 20.2 | 11 17         | 1 20.95                       | +11 54.9                   | 1.837    | 2.727 | 11.0    | 21.1 |
| 11 27         | 1 13.44                       | +0 5.2                     | 1.853    | 2.615 | 16.4    | 20.4 | 11 27         | 1 17.52                       | +11 32.9                   | 1.928    | 2.735 | 14.2    | 21.3 |
| <b>78662</b>  | 2002 <i>TN</i> <sub>86</sub>  | 10 20.3 294°66 0°4/20.6 17 |          |       |         |      | <b>485617</b> | 2011 <i>UN</i> <sub>330</sub> | 10 20.3 344°93 7°2/15.4 17 |          |       |         |      |
| 9 18          | 2 3.58                        | +11 54.5                   | 2.316    | 3.171 | 11.2    | 19.4 | 9 18          | 2 1.14                        | -3 53.3                    | 1.315    | 2.217 | 14.9    | 20.5 |
| 9 28          | 1 57.92                       | +11 56.0                   | 2.235    | 3.163 | 8.1     | 19.2 | 9 28          | 1 56.97                       | -4 49.6                    | 1.257    | 2.204 | 11.3    | 20.2 |
| 10 8          | 1 50.64                       | +11 50.2                   | 2.179    | 3.155 | 4.7     | 19.0 | 10 8          | 1 50.40                       | -5 41.6                    | 1.221    | 2.193 | 8.1     | 20.0 |
| 10 18         | 1 42.33                       | +11 38.9                   | 2.152    | 3.147 | 1.0     | 18.7 | 10 18         | 1 42.31                       | -6 20.6                    | 1.208    | 2.183 | 7.3     | 19.9 |
| 10 28         | 1 33.79                       | +11 24.9                   | 2.154    | 3.139 | 2.8     | 18.8 | 10 28         | 1 33.96                       | -6 38.1                    | 1.219    | 2.174 | 9.7     | 20.1 |
| 11 7          | 1 25.88                       | +11 11.7                   | 2.185    | 3.131 | 6.5     | 19.1 | 11 7          | 1 26.69                       | -6 29.6                    | 1.253    | 2.166 | 13.4    | 20.2 |
| 11 17         | 1 19.31                       | +11 2.9                    | 2.243    | 3.123 | 9.8     | 19.3 | 11 17         | 1 21.52                       | -5 54.4                    | 1.308    | 2.160 | 17.2    | 20.5 |
| 11 27         | 1 14.65                       | +11 1.4                    | 2.325    | 3.115 | 12.6    | 19.4 | 11 27         | 1 19.14                       | -4 54.7                    | 1.381    | 2.155 | 20.4    | 20.7 |
| <b>243983</b> | 2001 <i>RJ</i> <sub>53</sub>  | 10 20.3 352°65 7°0/15.0 18 |          |       |         |      | <b>22668</b>  | 1998 <i>QF</i> <sub>26</sub>  | 10 20.3 107°97 1°2/19.3 18 |          |       |         |      |
| 9 18          | 1 58.67                       | -2 29.4                    | 1.271    | 2.178 | 15.0    | 19.3 | 9 18          | 2 7.25                        | +10 6.3                    | 1.665    | 2.534 | 14.1    | 18.4 |
| 9 28          | 1 55.19                       | -3 43.5                    | 1.218    | 2.169 | 11.2    | 19.1 | 9 28          | 2 0.71                        | +9 17.5                    | 1.617    | 2.554 | 10.1    | 18.2 |
| 10 8          | 1 49.37                       | -                          |          |       |         |      |               |                               |                            |          |       |         |      |

EPHEMERIDES

10 20.3

10 20.3

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$   | $\beta$      | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$   | $\beta$        | $V$  |
|---------------|-------------------------------|-----------------|----------|-------|--------------|------|---------------|-------------------------------|-----------------|----------|-------|----------------|------|
| <b>183482</b> | 2003 <i>DE</i> <sub>12</sub>  | 10 20.3 228°31' |          |       | 1.6°/18.8 18 |      | <b>412122</b> | 2013 <i>GQ</i> <sub>30</sub>  | 10 20.3 118°84' |          |       | 0.2°/20.6 18   |      |
| 9 18          | 2 2.22                        | + 8 2.4         | 2.013    | 2.886 | 11.9         | 21.0 | 9 18          | 2 2.46                        | +13 20.7        | 2.546    | 3.396 | 10.5           | 22.0 |
| 9 28          | 1 57.02                       | + 7 22.3        | 1.947    | 2.885 | 8.5          | 20.8 | 9 28          | 1 56.84                       | +12 50.8        | 2.486    | 3.412 | 7.6            | 21.8 |
| 10 8          | 1 50.14                       | + 6 35.4        | 1.904    | 2.885 | 4.7          | 20.6 | 10 8          | 1 49.90                       | +12 12.6        | 2.452    | 3.427 | 4.3            | 21.6 |
| 10 18         | 1 42.25                       | + 5 46.1        | 1.890    | 2.884 | 1.6          | 20.4 | 10 18         | 1 42.22                       | +11 28.7        | 2.447    | 3.442 | 0.9            | 21.4 |
| 10 28         | 1 34.22                       | + 4 59.9        | 1.904    | 2.883 | 4.1          | 20.6 | 10 28         | 1 34.53                       | +10 43.1        | 2.472    | 3.457 | 2.6            | 21.5 |
| 11 7          | 1 26.96                       | + 4 22.0        | 1.946    | 2.882 | 7.9          | 20.8 | 11 7          | 1 27.52                       | +10 0.1         | 2.527    | 3.471 | 5.8            | 21.8 |
| 11 17         | 1 21.21                       | + 3 56.2        | 2.014    | 2.882 | 11.3         | 21.0 | 11 17         | 1 21.77                       | + 9 23.5        | 2.609    | 3.485 | 8.7            | 22.0 |
| 11 27         | 1 17.49                       | + 3 45.0        | 2.104    | 2.881 | 14.2         | 21.2 | 11 27         | 1 17.72                       | + 8 56.4        | 2.717    | 3.498 | 11.2           | 22.2 |
| <b>131074</b> | 2000 <i>YZ</i> <sub>92</sub>  | 10 20.3 208°53' |          |       | 4.7°/24.8 18 |      | <b>399746</b> | 2005 <i>GM</i> <sub>30</sub>  | 10 20.3 116°89' |          |       | 2.9°/17.4 18   |      |
| 9 18          | 2 4.48                        | +26 30.1        | 1.978    | 2.786 | 14.6         | 20.2 | 9 18          | 2 1.96                        | + 5 46.5        | 1.938    | 2.816 | 12.0           | 20.7 |
| 9 28          | 1 58.93                       | +26 19.0        | 1.897    | 2.783 | 11.7         | 20.0 | 9 28          | 1 56.80                       | + 4 28.9        | 1.883    | 2.825 | 8.5            | 20.5 |
| 10 8          | 1 51.34                       | +25 46.5        | 1.837    | 2.779 | 8.4          | 19.8 | 10 8          | 1 49.99                       | + 3 5.9         | 1.853    | 2.833 | 4.9            | 20.3 |
| 10 18         | 1 42.49                       | +24 53.0        | 1.803    | 2.776 | 5.5          | 19.6 | 10 18         | 1 42.24                       | + 1 43.7        | 1.852    | 2.841 | 2.9            | 20.2 |
| 10 28         | 1 33.41                       | +23 41.8        | 1.796    | 2.772 | 4.9          | 19.6 | 10 28         | 1 34.47                       | + 0 29.8        | 1.879    | 2.849 | 5.3            | 20.4 |
| 11 7          | 1 25.19                       | +22 20.0        | 1.818    | 2.767 | 7.3          | 19.7 | 11 7          | 1 27.54                       | - 0 29.9        | 1.934    | 2.857 | 8.8            | 20.6 |
| 11 17         | 1 18.71                       | +20 55.6        | 1.867    | 2.763 | 10.6         | 19.9 | 11 17         | 1 22.16                       | - 1 11.4        | 2.015    | 2.865 | 12.1           | 20.8 |
| 11 27         | 1 14.62                       | +19 36.9        | 1.940    | 2.758 | 13.7         | 20.1 | 11 27         | 1 18.82                       | - 1 33.2        | 2.116    | 2.872 | 14.8           | 21.0 |
| <b>344956</b> | 2004 <i>VF</i> <sub>92</sub>  | 10 20.3 122°57' |          |       | 1.8°/22.2 17 |      | <b>520323</b> | 2014 <i>GZ</i> <sub>59</sub>  | 10 20.3 8°30'   |          |       | 1.5°/21.6 18   |      |
| 9 18          | 2 4.03                        | +20 2.4         | 1.987    | 2.823 | 13.5         | 21.0 | 9 18          | 2 2.13                        | +17 17.5        | 1.707    | 2.564 | 14.4           | 21.2 |
| 9 28          | 1 58.28                       | +19 5.0         | 1.924    | 2.838 | 10.1         | 20.8 | 9 28          | 1 57.30                       | +16 44.2        | 1.639    | 2.565 | 10.7           | 21.0 |
| 10 8          | 1 50.81                       | +17 50.2        | 1.886    | 2.852 | 6.3          | 20.6 | 10 8          | 1 50.45                       | +15 54.3        | 1.593    | 2.565 | 6.5            | 20.8 |
| 10 18         | 1 42.37                       | +16 21.8        | 1.874    | 2.866 | 2.5          | 20.4 | 10 18         | 1 42.36                       | +14 51.2        | 1.573    | 2.566 | 2.3            | 20.5 |
| 10 28         | 1 33.93                       | +14 46.4        | 1.893    | 2.879 | 3.1          | 20.5 | 10 28         | 1 34.11                       | +13 40.9        | 1.580    | 2.567 | 3.4            | 20.6 |
| 11 7          | 1 26.44                       | +13 12.0        | 1.941    | 2.891 | 6.8          | 20.8 | 11 7          | 1 26.78                       | +12 31.3        | 1.615    | 2.568 | 7.7            | 20.8 |
| 11 17         | 1 20.62                       | +11 46.0        | 2.017    | 2.903 | 10.4         | 21.0 | 11 17         | 1 21.25                       | +11 29.5        | 1.676    | 2.569 | 11.7           | 21.1 |
| 11 27         | 1 16.96                       | +10 34.2        | 2.117    | 2.915 | 13.4         | 21.2 | 11 27         | 1 18.12                       | +10 41.4        | 1.759    | 2.571 | 15.1           | 21.3 |
| <b>103089</b> | 1999 <i>XL</i> <sub>163</sub> | 10 20.3 55°08'  |          |       | 0.7°/20.8 18 |      | <b>483937</b> | 2006 <i>BZ</i> <sub>100</sub> | 10 20.3 276°40' |          |       | 4.4°/24.5 17   |      |
| 9 18          | 2 3.80                        | +14 14.4        | 1.668    | 2.533 | 14.3         | 19.8 | 9 18          | 2 3.91                        | +25 8.6         | 2.272    | 3.079 | 13.0           | 21.7 |
| 9 28          | 1 58.43                       | +13 49.6        | 1.608    | 2.540 | 10.5         | 19.6 | 9 28          | 1 58.38                       | +25 25.4        | 2.185    | 3.071 | 10.4           | 21.5 |
| 10 8          | 1 51.03                       | +13 11.7        | 1.572    | 2.548 | 6.1          | 19.4 | 10 8          | 1 51.03                       | +25 26.0        | 2.121    | 3.063 | 7.5            | 21.3 |
| 10 18         | 1 42.42                       | +12 24.3        | 1.561    | 2.556 | 1.5          | 19.1 | 10 18         | 1 42.48                       | +25 9.7         | 2.084    | 3.055 | 5.1            | 21.1 |
| 10 28         | 1 33.72                       | +11 33.0        | 1.578    | 2.564 | 3.5          | 19.3 | 10 28         | 1 33.64                       | +24 38.3        | 2.074    | 3.047 | 4.6            | 21.1 |
| 11 7          | 1 26.03                       | +10 44.7        | 1.622    | 2.572 | 7.9          | 19.6 | 11 7          | 1 25.46                       | +23 56.2        | 2.093    | 3.039 | 6.7            | 21.2 |
| 11 17         | 1 20.21                       | +10 5.2         | 1.692    | 2.581 | 11.9         | 19.8 | 11 17         | 1 18.77                       | +23 8.8         | 2.139    | 3.030 | 9.6            | 21.4 |
| 11 27         | 1 16.82                       | + 9 39.0        | 1.783    | 2.589 | 15.2         | 20.1 | 11 27         | 1 14.18                       | +22 22.7        | 2.209    | 3.022 | 12.4           | 21.6 |
| <b>422728</b> | 2001 <i>FD</i> <sub>168</sub> | 10 20.3 233°33' |          |       | 0.7°/20.8 18 |      | <b>280285</b> | 2003 <i>FQ</i> <sub>107</sub> | 10 20.3 172°14' |          |       | 2.5°/17.9 18   |      |
| 9 18          | 2 7.37                        | +13 59.2        | 1.704    | 2.563 | 14.4         | 21.8 | 9 18          | 2 4.68                        | + 5 53.8        | 1.972    | 2.844 | 12.1           | 20.8 |
| 9 28          | 2 1.21                        | +13 41.3        | 1.624    | 2.553 | 10.6         | 21.6 | 9 28          | 1 58.80                       | + 4 57.2        | 1.909    | 2.847 | 8.6            | 20.6 |
| 10 8          | 1 52.74                       | +13 10.1        | 1.567    | 2.542 | 6.2          | 21.3 | 10 8          | 1 51.16                       | + 3 55.1        | 1.871    | 2.850 | 4.9            | 20.4 |
| 10 18         | 1 42.78                       | +12 28.4        | 1.536    | 2.531 | 1.5          | 21.0 | 10 18         | 1 42.49                       | + 2 52.9        | 1.861    | 2.852 | 2.5            | 20.2 |
| 10 28         | 1 32.46                       | +11 41.3        | 1.534    | 2.520 | 3.6          | 21.1 | 10 28         | 1 33.72                       | + 1 56.9        | 1.880    | 2.853 | 4.9            | 20.4 |
| 11 7          | 1 23.02                       | +10 55.3        | 1.560    | 2.508 | 8.4          | 21.3 | 11 7          | 1 25.80                       | + 1 12.7        | 1.928    | 2.854 | 8.6            | 20.6 |
| 11 17         | 1 15.51                       | +10 17.0        | 1.611    | 2.495 | 12.7         | 21.6 | 11 17         | 1 19.47                       | + 0 43.9        | 2.001    | 2.855 | 12.0           | 20.8 |
| 11 27         | 1 10.62                       | + 9 51.5        | 1.684    | 2.482 | 16.3         | 21.8 | 11 27         | 1 15.28                       | + 0 32.4        | 2.096    | 2.854 | 14.8           | 21.0 |
| <b>359241</b> | 2009 <i>EU</i> <sub>28</sub>  | 10 20.3 264°50' |          |       | 2.8°/17.3 18 |      | <b>38201</b>  | 1999 <i>LF</i> <sub>27</sub>  | 10 20.3 73°12'  |          |       | 5.4°/25.5 18   |      |
| 9 18          | 2 1.18                        | + 6 49.5        | 1.964    | 2.841 | 11.9         | 20.9 | 9 18          | 2 4.91                        | +28 24.6        | 1.623    | 2.434 | 17.2           | 18.7 |
| 9 28          | 1 56.43                       | + 5 21.2        | 1.883    | 2.825 | 8.5          | 20.6 | 9 28          | 1 59.35                       | +27 59.4        | 1.566    | 2.452 | 13.7           | 18.5 |
| 10 8          | 1 49.90                       | + 3 43.5        | 1.828    | 2.808 | 4.9          | 20.4 | 10 8          | 1 51.58                       | +27 7.3         | 1.529    | 2.470 | 9.9            | 18.3 |
| 10 18         | 1 42.23                       | + 2 3.2         | 1.801    | 2.791 | 2.8          | 20.2 | 10 18         | 1 42.56                       | +25 49.7        | 1.517    | 2.489 | 6.5            | 18.2 |
| 10 28         | 1 34.32                       | + 0 28.5        | 1.803    | 2.774 | 5.5          | 20.3 | 10 28         | 1 33.57                       | +24 12.7        | 1.531    | 2.507 | 5.5            | 18.2 |
| 11 7          | 1 27.09                       | - 0 52.8        | 1.833    | 2.756 | 9.2          | 20.5 | 11 7          | 1 25.81                       | +22 26.1        | 1.573    | 2.525 | 7.9            | 18.4 |
| 11 17         | 1 21.36                       | - 1 55.1        | 1.889    | 2.738 | 12.8         | 20.7 | 11 17         | 1 20.18                       | +20 40.6        | 1.641    | 2.543 | 11.4           | 18.6 |
| 11 27         | 1 17.70                       | - 2 35.3        | 1.966    | 2.720 | 15.8         | 20.9 | 11 27         | 1 17.21                       | +19 5.6         | 1.733    | 2.561 | 14.6           | 18.9 |
| <b>509183</b> | 2006 <i>JV</i> <sub>53</sub>  | 10 20.3 166°90' |          |       | 0.7°/20.9 18 |      | <b>495096</b> | 2011 <i>SY</i> <sub>183</sub> | 10 20.3 359°08' |          |       | 2.1°/18.7 17   |      |
| 9 18          | 2 4.28                        | +15 11.8        | 2.242    | 3.089 | 11.8         | 22.3 | 9 18          | 1 59.23                       | + 8 42.5        | 1.296    | 2.192 | 15.5           | 20.7 |
| 9 28          | 1 58.38                       | +14 38.3        | 2.171    | 3.094 | 8.7          | 22.1 | 9 28          | 1 55.61                       | + 7 52.2        | 1.238    | 2.188 | 11.1           | 20.5 |
| 10 8          | 1 50.87                       | +13 53.3        | 2.125    | 3.098 | 5.1          | 21.9 | 10 8          | 1 49.65                       | + 6 51.0        | 1.202    | 2.186 | 6.2            | 20.2 |
| 10 18         | 1 42.41                       | +12 59.7        | 2.107    | 3.101 | 1.4          | 21.7 | 10 18         | 1 42.24                       | + 5 45.9        | 1.190    | 2.185 | 2.1            | 19.9 |
| 10 28         | 1 33.85                       | +12 2.2         | 2.119    | 3.104 | 2.8          | 21.8 | 10 28         | 1 34.64                       | + 4 45.6        | 1.203    | 2.185 | 5.4            | 20.1 |
| 11 7          | 1 26.04                       | +11 6.3         | 2.161    | 3.107 | 6.5          | 22.0 | 11 7          | 1 28.13                       | + 3 58.5        | 1.241    | 2.186 | 10.4           | 20.4 |
| 11 17         | 1 19.69                       | +10 17.0        | 2.230    | 3.109 | 9.9          | 22.2 | 11 17         | 1 23.70                       | + 3 30.4        | 1.301    | 2.189 | 14.8           | 20.7 |
| 11 27         | 1 15.30                       | + 9 38.6        | 2.323    | 3.110 | 12.7         | 22.4 | 11 27         | 1 21.98                       | + 3 23.9        | 1.380    | 2.193 | 18.5           | 21.0 |
| <b>523222</b> | 2016 <i>WR</i> <sub>53</sub>  | 10 20.3 281°17' |          |       | 3.0°/18.2 18 |      | <b>185307</b> | 2006 <i>UA</i> <sub>278</sub> | 10 20.3 243°43' |          |       | 0.6°/20.7 18   |      |
| 9 18          | 2 7.13                        | + 3 4.5         | 1.864    | 2.738 | 12.6         | 21.6 | 9 18          | 2 6.37                        | +13 52.5        | 1.558    | 2.423 | 15.1           | 21.1 |
| 9 28          | 2 0.92                        | + 2 46.1        | 1.777    | 2.715 | 9.2          | 21.3 | 9 28          | 2 0.62                        | +13 30.8        | 1.485    | 2.417 | 11.1           | 20.9 |
| 10 8          | 1 52.56                       | + 2 25.5        | 1.714    | 2.692 | 5.4          | 21.1 | 10 8          | 1 52.47                       | +12 55.1        | 1.433    | 2.410 | 6.5            | 20.6 |
| 10 18         | 1 42.77                       | + 2 6.9         | 1.679    | 2.669 | 3.0          | 20.9 | 10 18         | 1 42.78                       | +12 8.4         | 1.408    | 2.403 | 1.5            | 20.2 |
| 10 28         | 1 32.55                       | + 1 55.2        | 1.672    | 2.646 | 5.4          | 21.0 | 10 28         | 1 32.78                       | +11 16.6        | 1.410    | 2.396 | 3.8            | 20.4 |
| 11 7          | 1 23.04                       | + 1 54.6        | 1.693    | 2.622 | 9.4          | 21.2 | 11 7          | 1 23.77                       | +10 27.2        | 1.439    | 2.388 | 8.8            | 20.7 |
| 11 17         | 1 15.21                       | + 2 7.8         | 1.740    | 2.599 | 13.2         | 21.3 | 11 17         | 1 16.80                       | + 9 46.9        | 1.492    | 2.381 | 13.2           | 20.9 |
| 11 27         | 1 9.77                        | + 2 36.2        | 1.808    | 2.575 | 16.5         | 21.5 | 11 27         | 1 12.59                       | + 9 21.1        | 1.567    | 2.373 | 17.0           | 21.2 |
| <b>446009</b> | 2013 <i>CB</i> <sub>39</sub>  | 10 20.3 230°03' |          |       | 2.9°/22.9 18 |      | <b>472658</b> | 2015 <i>DU</i> <sub>219</sub> | 10 20.3 139°28' |          |       | 3.1°/23.0 15</ |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$         | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$         | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------|-------------|---------|------|---------------|-------------------------------|-----------------|----------|-------------|---------|------|
| <b>104685</b> | 2000 <i>GK</i> <sub>154</sub> | 10 20.3 258°86  |          | 0°8/21.2 18 |         |      | <b>411454</b> | 2010 <i>WK</i> <sub>73</sub>  | 10 20.3 274°12  |          | 3°2/23.6 18 |         |      |
| 9 18          | 2 1.54                        | +16 58.2        | 1.990    | 2.842       | 12.9    | 20.2 | 9 18          | 2 1.77                        | +22 41.2        | 2.218    | 3.041       | 12.7    | 21.0 |
| 9 28          | 1 56.73                       | +16 1.4         | 1.906    | 2.831       | 9.6     | 20.0 | 9 28          | 1 56.81                       | +22 27.3        | 2.134    | 3.034       | 9.9     | 20.8 |
| 10 8          | 1 50.11                       | +14 48.4        | 1.846    | 2.819       | 5.7     | 19.7 | 10 8          | 1 50.14                       | +21 56.9        | 2.073    | 3.028       | 6.8     | 20.6 |
| 10 18         | 1 42.35                       | +13 22.7        | 1.813    | 2.808       | 1.6     | 19.4 | 10 18         | 1 42.39                       | +21 11.1        | 2.039    | 3.021       | 3.9     | 20.4 |
| 10 28         | 1 34.37                       | +11 50.9        | 1.810    | 2.796       | 3.1     | 19.5 | 10 28         | 1 34.43                       | +20 13.3        | 2.034    | 3.015       | 3.6     | 20.4 |
| 11 7          | 1 27.13                       | +10 20.8        | 1.835    | 2.784       | 7.3     | 19.8 | 11 7          | 1 27.16                       | +19 9.0         | 2.057    | 3.008       | 6.4     | 20.5 |
| 11 17         | 1 21.42                       | + 8 59.8        | 1.888    | 2.772       | 11.1    | 20.0 | 11 17         | 1 21.34                       | +18 4.6         | 2.107    | 3.001       | 9.6     | 20.7 |
| 11 27         | 1 17.84                       | + 7 53.8        | 1.964    | 2.760       | 14.4    | 20.2 | 11 27         | 1 17.53                       | +17 6.2         | 2.181    | 2.995       | 12.5    | 20.9 |
| <b>219491</b> | 2001 <i>FK</i> <sub>1</sub>   | 10 20.3 127°09  |          | 2°3/18.3 17 |         |      | <b>409183</b> | 2003 <i>UF</i> <sub>299</sub> | 10 20.3 314°80  |          | 0°3/20.1 17 |         |      |
| 9 18          | 2 6.40                        | + 7 33.0        | 1.718    | 2.591       | 13.5    | 21.1 | 9 18          | 2 2.42                        | +10 34.2        | 2.094    | 2.959       | 11.8    | 21.0 |
| 9 28          | 2 0.13                        | + 6 27.8        | 1.667    | 2.606       | 9.6     | 20.9 | 9 28          | 1 57.28                       | +10 21.8        | 2.015    | 2.949       | 8.5     | 20.8 |
| 10 8          | 1 51.93                       | + 5 15.3        | 1.640    | 2.620       | 5.4     | 20.7 | 10 8          | 1 50.42                       | +10 1.8         | 1.961    | 2.939       | 4.8     | 20.5 |
| 10 18         | 1 42.67                       | + 4 2.0         | 1.641    | 2.634       | 2.3     | 20.5 | 10 18         | 1 42.45                       | + 9 36.9        | 1.933    | 2.929       | 0.9     | 20.2 |
| 10 28         | 1 33.43                       | + 2 55.2        | 1.671    | 2.647       | 5.1     | 20.8 | 10 28         | 1 34.25                       | + 9 10.9        | 1.935    | 2.919       | 3.2     | 20.4 |
| 11 7          | 1 25.25                       | + 2 1.6         | 1.728    | 2.659       | 9.1     | 21.0 | 11 7          | 1 26.71                       | + 8 48.3        | 1.965    | 2.910       | 7.1     | 20.6 |
| 11 17         | 1 18.95                       | + 1 25.4        | 1.811    | 2.671       | 12.7    | 21.3 | 11 17         | 1 20.62                       | + 8 33.0        | 2.021    | 2.901       | 10.7    | 20.8 |
| 11 27         | 1 15.02                       | + 1 8.5         | 1.914    | 2.682       | 15.7    | 21.5 | 11 27         | 1 16.55                       | + 8 28.0        | 2.100    | 2.892       | 13.7    | 21.0 |
| <b>211798</b> | 2004 <i>CP</i> <sub>113</sub> | 10 20.3 268°96  |          | 0°1/20.2 18 |         |      | <b>101457</b> | 1998 <i>WF</i> <sub>6</sub>   | 10 20.3 20°32   |          | 8°2/17.7 18 |         |      |
| 9 18          | 2 2.24                        | +12 56.0        | 1.927    | 2.790       | 12.7    | 20.9 | 9 18          | 2 11.21                       | - 7 4.0         | 0.951    | 1.853       | 19.2    | 17.9 |
| 9 28          | 1 57.26                       | +12 13.8        | 1.846    | 2.779       | 9.3     | 20.7 | 9 28          | 2 4.56                        | - 6 55.8        | 0.918    | 1.863       | 14.6    | 17.7 |
| 10 8          | 1 50.43                       | +11 19.5        | 1.790    | 2.768       | 5.3     | 20.4 | 10 8          | 1 54.76                       | - 6 33.1        | 0.903    | 1.875       | 10.2    | 17.5 |
| 10 18         | 1 42.41                       | +10 16.9        | 1.761    | 2.757       | 1.0     | 20.1 | 10 18         | 1 43.24                       | - 5 49.5        | 0.911    | 1.889       | 8.2     | 17.4 |
| 10 28         | 1 34.15                       | + 9 11.7        | 1.760    | 2.745       | 3.5     | 20.3 | 10 28         | 1 31.92                       | - 4 41.9        | 0.941    | 1.904       | 10.3    | 17.6 |
| 11 7          | 1 26.63                       | + 8 10.9        | 1.788    | 2.734       | 7.7     | 20.5 | 11 7          | 1 22.55                       | - 3 12.4        | 0.993    | 1.921       | 14.4    | 17.9 |
| 11 17         | 1 20.67                       | + 7 20.2        | 1.842    | 2.722       | 11.5    | 20.7 | 11 17         | 1 16.26                       | - 1 25.8        | 1.066    | 1.940       | 18.6    | 18.2 |
| 11 27         | 1 16.90                       | + 6 44.2        | 1.918    | 2.710       | 14.8    | 20.9 | 11 27         | 1 13.59                       | + 0 32.7        | 1.157    | 1.959       | 22.0    | 18.5 |
| <b>273594</b> | 2007 <i>CX</i> <sub>57</sub>  | 10 20.3 203°28  |          | 4°1/17.2 18 |         |      | <b>246629</b> | 2008 <i>WP</i> <sub>94</sub>  | 10 20.3 316°15  |          | 4°0/17.5 18 |         |      |
| 9 18          | 2 6.65                        | + 1 34.1        | 1.707    | 2.587       | 13.3    | 20.8 | 9 18          | 2 3.31                        | + 3 4.0         | 1.453    | 2.344       | 14.4    | 19.6 |
| 9 28          | 2 0.49                        | + 0 48.6        | 1.645    | 2.585       | 9.6     | 20.6 | 9 28          | 1 58.59                       | + 2 22.2        | 1.377    | 2.324       | 10.5    | 19.3 |
| 10 8          | 1 52.25                       | + 0 1.6         | 1.606    | 2.583       | 5.9     | 20.4 | 10 8          | 1 51.45                       | + 1 36.1        | 1.323    | 2.304       | 6.3     | 19.0 |
| 10 18         | 1 42.75                       | - 0 40.9        | 1.594    | 2.580       | 4.1     | 20.2 | 10 18         | 1 42.68                       | + 0 52.3        | 1.295    | 2.284       | 4.0     | 18.8 |
| 10 28         | 1 33.10                       | - 1 12.5        | 1.610    | 2.577       | 6.5     | 20.4 | 10 28         | 1 33.48                       | + 0 18.4        | 1.292    | 2.265       | 6.8     | 18.9 |
| 11 7          | 1 24.40                       | - 1 28.3        | 1.653    | 2.574       | 10.2    | 20.6 | 11 7          | 1 25.16                       | + 0 0.9         | 1.314    | 2.246       | 11.3    | 19.1 |
| 11 17         | 1 17.55                       | - 1 26.0        | 1.720    | 2.570       | 13.8    | 20.8 | 11 17         | 1 18.84                       | + 0 3.6         | 1.359    | 2.228       | 15.6    | 19.4 |
| 11 27         | 1 13.17                       | - 1 5.0         | 1.808    | 2.566       | 16.9    | 21.0 | 11 27         | 1 15.28                       | + 0 27.8        | 1.423    | 2.211       | 19.3    | 19.6 |
| <b>247248</b> | 2001 <i>RB</i> <sub>40</sub>  | 10 20.3 6°28    |          | 1°3/19.2 18 |         |      | <b>206687</b> | 2003 <i>YC</i> <sub>148</sub> | 10 20.3 206°02  |          | 0°6/20.8 18 |         |      |
| 9 18          | 2 1.25                        | + 9 43.0        | 1.596    | 2.478       | 13.9    | 20.4 | 9 18          | 2 7.42                        | +12 29.7        | 2.139    | 2.990       | 12.1    | 20.2 |
| 9 28          | 1 56.71                       | + 8 57.7        | 1.535    | 2.478       | 10.0    | 20.1 | 9 28          | 2 0.84                        | +12 33.1        | 2.061    | 2.987       | 8.9     | 19.9 |
| 10 8          | 1 50.15                       | + 8 2.5         | 1.497    | 2.479       | 5.6     | 19.9 | 10 8          | 1 52.42                       | +12 28.1        | 2.009    | 2.983       | 5.2     | 19.7 |
| 10 18         | 1 42.36                       | + 7 2.7         | 1.485    | 2.480       | 1.5     | 19.6 | 10 18         | 1 42.83                       | +12 16.4        | 1.984    | 2.979       | 1.3     | 19.4 |
| 10 28         | 1 34.43                       | + 6 5.4         | 1.500    | 2.482       | 4.5     | 19.8 | 10 28         | 1 33.02                       | +12 0.9         | 1.989    | 2.974       | 3.0     | 19.6 |
| 11 7          | 1 27.45                       | + 5 17.5        | 1.541    | 2.485       | 8.9     | 20.1 | 11 7          | 1 23.94                       | +11 45.8        | 2.024    | 2.969       | 6.9     | 19.8 |
| 11 17         | 1 22.29                       | + 4 44.3        | 1.607    | 2.488       | 12.9    | 20.4 | 11 17         | 1 16.42                       | +11 34.7        | 2.085    | 2.964       | 10.5    | 20.0 |
| 11 27         | 1 19.52                       | + 4 28.9        | 1.694    | 2.491       | 16.3    | 20.6 | 11 27         | 1 11.05                       | +11 31.3        | 2.171    | 2.959       | 13.5    | 20.2 |
| <b>288314</b> | 2004 <i>BS</i> <sub>36</sub>  | 10 20.3 130°97  |          | 4°8/16.7 18 |         |      | <b>407599</b> | 2011 <i>BQ</i> <sub>10</sub>  | 10 20.3 175°88  |          | 4°0/15.8 18 |         |      |
| 9 18          | 2 6.17                        | + 1 7.3         | 1.560    | 2.445       | 14.0    | 20.5 | 9 18          | 2 0.41                        | - 1 3.7         | 2.412    | 3.290       | 9.9     | 21.1 |
| 9 28          | 2 0.17                        | + 0 2.3         | 1.509    | 2.452       | 10.1    | 20.3 | 9 28          | 1 55.51                       | - 2 2.3         | 2.353    | 3.291       | 7.3     | 21.0 |
| 10 8          | 1 52.06                       | - 1 3.8         | 1.482    | 2.458       | 6.4     | 20.1 | 10 8          | 1 49.26                       | - 3 0.3         | 2.320    | 3.291       | 4.9     | 20.8 |
| 10 18         | 1 42.72                       | - 2 3.6         | 1.481    | 2.464       | 4.8     | 20.0 | 10 18         | 1 42.21                       | - 3 52.6        | 2.315    | 3.291       | 4.1     | 20.8 |
| 10 28         | 1 33.33                       | - 2 49.2        | 1.507    | 2.470       | 7.3     | 20.2 | 10 28         | 1 35.09                       | - 4 34.4        | 2.339    | 3.292       | 5.8     | 20.9 |
| 11 7          | 1 25.05                       | - 3 15.5        | 1.559    | 2.475       | 11.0    | 20.4 | 11 7          | 1 28.60                       | - 5 1.9         | 2.391    | 3.292       | 8.4     | 21.1 |
| 11 17         | 1 18.76                       | - 3 20.0        | 1.634    | 2.480       | 14.6    | 20.7 | 11 17         | 1 23.34                       | - 5 13.2        | 2.468    | 3.292       | 11.0    | 21.2 |
| 11 27         | 1 15.02                       | - 3 3.1         | 1.729    | 2.485       | 17.6    | 20.9 | 11 27         | 1 19.74                       | - 5 8.0         | 2.566    | 3.292       | 13.2    | 21.4 |
| <b>228498</b> | 2001 <i>SO</i> <sub>286</sub> | 10 20.3 6°94    |          | 8°5/15.9 18 |         |      | <b>274907</b> | 2009 <i>SP</i> <sub>118</sub> | 10 20.3 300°15  |          | 1°3/21.5 17 |         |      |
| 9 18          | 2 1.67                        | - 4 35.0        | 0.937    | 1.853       | 18.0    | 18.1 | 9 18          | 2 1.42                        | +16 3.4         | 2.093    | 2.945       | 12.3    | 21.3 |
| 9 28          | 1 57.83                       | - 5 22.0        | 0.900    | 1.854       | 13.6    | 17.9 | 9 28          | 1 56.66                       | +15 44.5        | 2.003    | 2.927       | 9.2     | 21.1 |
| 10 8          | 1 51.06                       | - 6 0.1         | 0.881    | 1.856       | 9.8     | 17.7 | 10 8          | 1 50.12                       | +15 13.0        | 1.938    | 2.910       | 5.6     | 20.8 |
| 10 18         | 1 42.54                       | - 6 19.0        | 0.883    | 1.861       | 8.6     | 17.7 | 10 18         | 1 42.41                       | +14 30.9        | 1.899    | 2.892       | 1.9     | 20.5 |
| 10 28         | 1 33.97                       | - 6 10.6        | 0.906    | 1.867       | 11.1    | 17.8 | 10 28         | 1 34.39                       | +13 42.2        | 1.889    | 2.875       | 3.0     | 20.6 |
| 11 7          | 1 26.97                       | - 5 32.1        | 0.950    | 1.876       | 15.2    | 18.1 | 11 7          | 1 27.00                       | +12 52.6        | 1.907    | 2.858       | 6.9     | 20.8 |
| 11 17         | 1 22.67                       | - 4 25.8        | 1.013    | 1.886       | 19.3    | 18.4 | 11 17         | 1 21.05                       | +12 7.5         | 1.952    | 2.841       | 10.5    | 21.0 |
| 11 27         | 1 21.66                       | - 2 56.6        | 1.092    | 1.899       | 22.8    | 18.7 | 11 27         | 1 17.16                       | +11 32.0        | 2.020    | 2.824       | 13.7    | 21.2 |
| <b>408727</b> | 2014 <i>ON</i> <sub>42</sub>  | 10 20.3 0°82    |          | 6°0/14.8 18 |         |      | <b>127657</b> | 2003 <i>DV</i> <sub>9</sub>   | 10 20.3 173°91  |          | 2°2/18.6 18 |         |      |
| 9 18          | 2 1.58                        | - 4 52.2        | 1.906    | 2.791       | 11.9    | 20.0 | 9 18          | 2 7.40                        | + 5 46.1        | 1.825    | 2.697       | 12.9    | 20.7 |
| 9 28          | 1 56.63                       | - 5 53.9        | 1.854    | 2.790       | 9.0     | 19.9 | 9 28          | 2 0.93                        | + 5 16.4        | 1.761    | 2.699       | 9.3     | 20.5 |
| 10 8          | 1 49.97                       | - 6 51.3        | 1.825    | 2.790       | 6.6     | 19.7 | 10 8          | 1 52.48                       | + 4 42.1        | 1.721    | 2.700       | 5.3     | 20.3 |
| 10 18         | 1 42.32                       | - 7 37.8        | 1.823    | 2.790       | 6.1     | 19.7 | 10 18         | 1 42.84                       | + 4 7.5         | 1.709    | 2.702       | 2.3     | 20.1 |
| 10 28         | 1 34.59                       | - 8 7.5         | 1.849    | 2.790       | 8.0     | 19.8 | 10 28         | 1 33.07                       | + 3 37.9        | 1.726    | 2.703       | 4.8     | 20.3 |
| 11 7          | 1 27.69                       | - 8 17.0        | 1.899    | 2.791       | 10.8    | 20.0 | 11 7          | 1 24.22                       | + 3 18.1        | 1.770    | 2.703       | 8.8     | 20.5 |
| 11 17         | 1 22.33                       | - 8 5.2         | 1.973    | 2.792       | 13.6    | 20.2 | 11 17         | 1 17.16                       | + 3 11.5        | 1.840    | 2.703       | 12.4    | 20.7 |
| 11 27         | 1 19.04                       | - 7 33.2        | 2.067    | 2.793       | 16.0    | 20.4 | 11 27         | 1 12.47                       | + 3 19.7        | 1.932    | 2.702       | 15.5    | 20.9 |
| <b>515711</b> | 2014 <i>RT</i> <sub>7</sub>   | 10 20.3 120°09  |          | 3°3/16.6 18 |         |      | <b>521442</b> | 2015 <i>NH</i> <sub>28</sub>  | 10 20.3 95°01   |          | 1°5/21.7 18 |         |      |
| 9 18          | 2 0.31                        | + 2 13.6        | 2        |             |         |      |               |                               |                 |          |             |         |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$    | $\beta$  | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$    | $\beta$  | $V$  |
|---------------|-------------------------------|-----------------|----------|--------|----------|------|---------------|-------------------------------|-----------------|----------|--------|----------|------|
| <b>406258</b> | 2007 <i>DQ</i> <sub>115</sub> |                 | 10 20.3  | 77°54  | 0°4/19.9 | 18   | <b>340121</b> | 2005 <i>WX</i> <sub>199</sub> |                 | 10 20.3  | 298°72 | 2°2/23.2 | 18   |
| 9 18          | 2 2.39                        | +11 12.4        | 2.153    | 3.016  | 11.6     | 21.4 | 9 18          | 1 58.28                       | +21 0.4         | 2.997    | 3.819  | 9.8      | 21.0 |
| 9 28          | 1 57.00                       | +10 38.6        | 2.100    | 3.033  | 8.3      | 21.2 | 9 28          | 1 53.95                       | +20 44.0        | 2.906    | 3.808  | 7.5      | 20.9 |
| 10 8          | 1 50.11                       | +9 56.8         | 2.071    | 3.050  | 4.6      | 21.0 | 10 8          | 1 48.40                       | +20 16.0        | 2.840    | 3.797  | 5.0      | 20.7 |
| 10 18         | 1 42.38                       | +9 10.7         | 2.071    | 3.066  | 0.9      | 20.8 | 10 18         | 1 42.10                       | +19 37.6        | 2.801    | 3.786  | 2.7      | 20.5 |
| 10 28         | 1 34.65                       | +8 24.9         | 2.099    | 3.083  | 3.2      | 21.0 | 10 28         | 1 35.63                       | +18 51.5        | 2.793    | 3.775  | 2.6      | 20.5 |
| 11 7          | 1 27.72                       | +7 44.3         | 2.157    | 3.100  | 6.8      | 21.2 | 11 7          | 1 29.63                       | +18 1.4         | 2.813    | 3.764  | 4.9      | 20.6 |
| 11 17         | 1 22.24                       | +7 12.9         | 2.241    | 3.116  | 10.0     | 21.5 | 11 17         | 1 24.63                       | +17 11.4        | 2.863    | 3.753  | 7.5      | 20.8 |
| 11 27         | 1 18.66                       | +6 53.4         | 2.348    | 3.132  | 12.7     | 21.7 | 11 27         | 1 21.07                       | +16 25.7        | 2.938    | 3.743  | 9.9      | 20.9 |
| <b>47131</b>  | 1999 <i>CA</i> <sub>133</sub> |                 | 10 20.3  | 319°87 | 0°5/19.9 | 18   | <b>523601</b> | 2003 <i>UY</i> <sub>413</sub> |                 | 10 20.3  | 47°97  | 0°4/27.1 | 18   |
| 9 18          | 2 0.44                        | +11 7.6         | 2.015    | 2.884  | 12.0     | 18.8 | 9 18          | 1 43.28                       | +28 57.1        | 41.323   | 42.072 | 0.9      | 21.7 |
| 9 28          | 1 55.93                       | +10 38.0        | 1.934    | 2.870  | 8.7      | 18.6 | 9 28          | 1 42.51                       | +28 56.1        | 41.238   | 42.077 | 0.8      | 21.7 |
| 10 8          | 1 49.69                       | +9 59.1         | 1.877    | 2.857  | 4.9      | 18.4 | 10 8          | 1 41.68                       | +28 54.0        | 41.179   | 42.082 | 0.6      | 21.7 |
| 10 18         | 1 42.33                       | +9 14.2         | 1.848    | 2.843  | 0.9      | 18.0 | 10 18         | 1 40.81                       | +28 50.9        | 41.146   | 42.087 | 0.4      | 21.7 |
| 10 28         | 1 34.72                       | +8 28.4         | 1.846    | 2.830  | 3.4      | 18.2 | 10 28         | 1 39.93                       | +28 47.0        | 41.142   | 42.093 | 0.4      | 21.7 |
| 11 7          | 1 27.78                       | +7 47.0         | 1.872    | 2.817  | 7.4      | 18.4 | 11 7          | 1 39.08                       | +28 42.4        | 41.167   | 42.098 | 0.5      | 21.7 |
| 11 17         | 1 22.28                       | +7 14.9         | 1.925    | 2.805  | 11.1     | 18.7 | 11 17         | 1 38.29                       | +28 37.3        | 41.221   | 42.103 | 0.6      | 21.7 |
| 11 27         | 1 18.81                       | +6 55.7         | 1.999    | 2.793  | 14.2     | 18.8 | 11 27         | 1 37.58                       | +28 31.9        | 41.302   | 42.108 | 0.8      | 21.7 |
| <b>275116</b> | 2009 <i>VD</i> <sub>57</sub>  |                 | 10 20.3  | 20°76  | 1°2/18.2 | 18   | <b>480121</b> | 2015 <i>FJ</i> <sub>103</sub> |                 | 10 20.3  | 242°40 | 3°5/23.1 | 17   |
| 9 18          | 1 55.56                       | +4 51.5         | 4.200    | 5.066  | 6.4      | 20.1 | 9 18          | 2 5.71                        | +21 33.4        | 1.548    | 2.391  | 16.4     | 21.5 |
| 9 28          | 1 51.61                       | +4 29.9         | 4.131    | 5.066  | 4.5      | 20.0 | 9 28          | 2 0.27                        | +21 19.3        | 1.473    | 2.386  | 12.6     | 21.3 |
| 10 8          | 1 46.91                       | +4 6.7          | 4.089    | 5.067  | 2.6      | 19.9 | 10 8          | 1 52.38                       | +20 43.5        | 1.419    | 2.382  | 8.4      | 21.0 |
| 10 18         | 1 41.78                       | +3 43.8         | 4.076    | 5.068  | 1.2      | 19.8 | 10 18         | 1 42.90                       | +19 47.3        | 1.390    | 2.377  | 4.4      | 20.8 |
| 10 28         | 1 36.59                       | +3 23.4         | 4.094    | 5.068  | 2.5      | 19.9 | 10 28         | 1 33.11                       | +18 35.7        | 1.388    | 2.372  | 4.3      | 20.8 |
| 11 7          | 1 31.72                       | +3 7.4          | 4.143    | 5.069  | 4.4      | 20.0 | 11 7          | 1 24.36                       | +17 17.5        | 1.412    | 2.367  | 8.4      | 21.0 |
| 11 17         | 1 27.51                       | +2 57.4         | 4.219    | 5.070  | 6.2      | 20.1 | 11 17         | 1 17.72                       | +16 2.1         | 1.462    | 2.361  | 12.7     | 21.2 |
| 11 27         | 1 24.24                       | +2 54.5         | 4.321    | 5.071  | 7.9      | 20.3 | 11 27         | 1 13.92                       | +14 58.1        | 1.533    | 2.356  | 16.5     | 21.5 |
| <b>485354</b> | 2011 <i>CW</i> <sub>48</sub>  |                 | 10 20.3  | 186°74 | 3°7/24.6 | 17   | <b>140677</b> | 2001 <i>UZ</i> <sub>51</sub>  |                 | 10 20.3  | 6°83   | 1°7/18.9 | 18   |
| 9 18          | 2 2.25                        | +25 19.4        | 2.686    | 3.486  | 11.4     | 22.0 | 9 18          | 2 1.95                        | +8 14.6         | 1.681    | 2.562  | 13.4     | 19.8 |
| 9 28          | 1 56.91                       | +25 17.6        | 2.604    | 3.485  | 9.1      | 21.8 | 9 28          | 1 57.16                       | +7 33.7         | 1.620    | 2.562  | 9.6      | 19.6 |
| 10 8          | 1 50.10                       | +25 0.9         | 2.545    | 3.485  | 6.5      | 21.6 | 10 8          | 1 50.43                       | +6 45.0         | 1.582    | 2.563  | 5.4      | 19.4 |
| 10 18         | 1 42.40                       | +24 29.7        | 2.512    | 3.484  | 4.3      | 21.5 | 10 18         | 1 42.51                       | +5 53.6         | 1.570    | 2.564  | 1.8      | 19.1 |
| 10 28         | 1 34.54                       | +23 46.4        | 2.509    | 3.483  | 3.8      | 21.5 | 10 28         | 1 34.45                       | +5 5.8          | 1.585    | 2.566  | 4.6      | 19.3 |
| 11 7          | 1 27.28                       | +22 55.0        | 2.536    | 3.482  | 5.7      | 21.6 | 11 7          | 1 27.30                       | +4 27.7         | 1.628    | 2.568  | 8.8      | 19.6 |
| 11 17         | 1 21.27                       | +22 0.5         | 2.590    | 3.481  | 8.2      | 21.7 | 11 17         | 1 21.90                       | +4 3.9          | 1.694    | 2.570  | 12.6     | 19.8 |
| 11 27         | 1 17.01                       | +21 8.3         | 2.670    | 3.479  | 10.6     | 21.9 | 11 27         | 1 18.82                       | +3 56.7         | 1.782    | 2.573  | 15.8     | 20.1 |
| <b>157455</b> | 2004 <i>WV</i>                |                 | 10 20.3  | 174°25 | 5°1/15.7 | 18   | <b>417417</b> | 2006 <i>KM</i> <sub>11</sub>  |                 | 10 20.3  | 86°37  | 3°0/18.5 | 17   |
| 9 18          | 2 3.85                        | -4 59.6         | 2.242    | 3.116  | 10.8     | 19.9 | 9 18          | 2 10.41                       | +5 4.0          | 1.329    | 2.212  | 16.1     | 21.0 |
| 9 28          | 1 58.05                       | -5 35.7         | 2.184    | 3.116  | 8.1      | 19.7 | 9 28          | 2 3.39                        | +4 30.3         | 1.288    | 2.231  | 11.5     | 20.8 |
| 10 8          | 1 50.72                       | -6 7.4          | 2.152    | 3.116  | 5.8      | 19.6 | 10 8          | 1 53.94                       | +3 52.1         | 1.269    | 2.250  | 6.5      | 20.6 |
| 10 18         | 1 42.51                       | -6 29.9         | 2.147    | 3.116  | 5.2      | 19.6 | 10 18         | 1 43.16                       | +3 15.7         | 1.276    | 2.268  | 3.0      | 20.4 |
| 10 28         | 1 34.23                       | -6 39.1         | 2.171    | 3.116  | 6.8      | 19.7 | 10 28         | 1 32.49                       | +2 47.9         | 1.309    | 2.286  | 6.0      | 20.6 |
| 11 7          | 1 26.68                       | -6 32.4         | 2.222    | 3.116  | 9.3      | 19.8 | 11 7          | 1 23.29                       | +2 34.1         | 1.368    | 2.304  | 10.5     | 21.0 |
| 11 17         | 1 20.54                       | -6 9.2          | 2.298    | 3.116  | 11.9     | 20.0 | 11 17         | 1 16.52                       | +2 37.1         | 1.451    | 2.322  | 14.7     | 21.3 |
| 11 27         | 1 16.28                       | -5 30.4         | 2.395    | 3.116  | 14.2     | 20.2 | 11 27         | 1 12.70                       | +2 57.6         | 1.553    | 2.339  | 18.0     | 21.5 |
| <b>327176</b> | 2005 <i>JP</i> <sub>127</sub> |                 | 10 20.3  | 102°06 | 1°6/19.1 | 16   | <b>392388</b> | 2010 <i>JC</i> <sub>82</sub>  |                 | 10 20.3  | 100°32 | 0°1/20.4 | 18   |
| 9 18          | 2 7.79                        | +9 15.9         | 1.581    | 2.453  | 14.6     | 21.5 | 9 18          | 2 7.76                        | +11 54.5        | 2.066    | 2.919  | 12.4     | 21.1 |
| 9 28          | 2 1.22                        | +8 24.9         | 1.536    | 2.474  | 10.4     | 21.3 | 9 28          | 2 0.87                        | +11 42.1        | 2.015    | 2.943  | 8.9      | 21.0 |
| 10 8          | 1 52.59                       | +7 25.2         | 1.514    | 2.494  | 5.7      | 21.0 | 10 8          | 1 52.32                       | +11 21.3        | 1.990    | 2.965  | 5.1      | 20.8 |
| 10 18         | 1 42.86                       | +6 22.6         | 1.520    | 2.514  | 1.7      | 20.8 | 10 18         | 1 42.85                       | +10 54.8        | 1.992    | 2.988  | 1.0      | 20.5 |
| 10 28         | 1 33.21                       | +5 24.4         | 1.553    | 2.534  | 4.6      | 21.1 | 10 28         | 1 33.42                       | +10 26.5        | 2.025    | 3.010  | 3.1      | 20.7 |
| 11 7          | 1 24.78                       | +4 37.2         | 1.614    | 2.552  | 9.0      | 21.4 | 11 7          | 1 24.95                       | +10 1.0         | 2.087    | 3.031  | 6.9      | 21.0 |
| 11 17         | 1 18.41                       | +4 5.6          | 1.700    | 2.570  | 12.9     | 21.7 | 11 17         | 1 18.15                       | +9 42.1         | 2.176    | 3.052  | 10.2     | 21.3 |
| 11 27         | 1 14.59                       | +3 51.8         | 1.807    | 2.588  | 16.0     | 21.9 | 11 27         | 1 13.48                       | +9 32.6         | 2.288    | 3.072  | 13.0     | 21.5 |
| <b>512360</b> | 2016 <i>NA</i> <sub>39</sub>  |                 | 10 20.3  | 27°29  | 0°4/20.5 | 18   | <b>449790</b> | 2014 <i>OB</i> <sub>209</sub> |                 | 10 20.3  | 9°32   | 2°1/22.1 | 18   |
| 9 18          | 2 3.39                        | +13 13.7        | 1.115    | 2.005  | 18.0     | 19.9 | 9 18          | 2 2.30                        | +17 40.6        | 1.820    | 2.673  | 13.9     | 20.8 |
| 9 28          | 1 58.80                       | +12 51.5        | 1.072    | 2.017  | 13.1     | 19.6 | 9 28          | 1 57.41                       | +17 32.4        | 1.752    | 2.674  | 10.4     | 20.6 |
| 10 8          | 1 51.52                       | +12 13.3        | 1.049    | 2.030  | 7.5      | 19.4 | 10 8          | 1 50.58                       | +17 9.5         | 1.706    | 2.675  | 6.5      | 20.4 |
| 10 18         | 1 42.68                       | +11 24.4        | 1.049    | 2.044  | 1.6      | 19.1 | 10 18         | 1 42.56                       | +16 34.0        | 1.686    | 2.677  | 2.8      | 20.2 |
| 10 28         | 1 33.83                       | +10 33.0        | 1.073    | 2.059  | 4.4      | 19.3 | 10 28         | 1 34.36                       | +15 50.1        | 1.694    | 2.680  | 3.3      | 20.2 |
| 11 7          | 1 26.44                       | +9 48.0         | 1.121    | 2.076  | 9.9      | 19.7 | 11 7          | 1 27.01                       | +15 3.8         | 1.729    | 2.683  | 7.2      | 20.5 |
| 11 17         | 1 21.57                       | +9 16.5         | 1.191    | 2.093  | 14.7     | 20.0 | 11 17         | 1 21.37                       | +14 21.3        | 1.790    | 2.686  | 10.9     | 20.7 |
| 11 27         | 1 19.79                       | +9 2.7          | 1.280    | 2.111  | 18.6     | 20.3 | 11 27         | 1 18.02                       | +13 47.9        | 1.874    | 2.690  | 14.2     | 20.9 |
| <b>473492</b> | 2015 <i>XF</i> <sub>102</sub> |                 | 10 20.3  | 30°98  | 5°2/15.5 | 18   | <b>120884</b> | 1998 <i>RY</i> <sub>50</sub>  |                 | 10 20.3  | 332°68 | 3°9/23.7 | 18   |
| 9 18          | 2 2.43                        | -4 14.9         | 2.096    | 2.975  | 11.2     | 20.5 | 9 18          | 2 4.12                        | +22 13.6        | 2.054    | 2.879  | 13.5     | 19.3 |
| 9 28          | 1 57.11                       | -5 2.2          | 2.043    | 2.978  | 8.4      | 20.3 | 9 28          | 1 58.69                       | +22 32.5        | 1.974    | 2.875  | 10.6     | 19.1 |
| 10 8          | 1 50.22                       | -5 45.5         | 2.015    | 2.981  | 6.0      | 20.2 | 10 8          | 1 51.32                       | +22 35.9        | 1.917    | 2.870  | 7.4      | 18.9 |
| 10 18         | 1 42.44                       | -6 19.5         | 2.014    | 2.984  | 5.3      | 20.1 | 10 18         | 1 42.71                       | +22 23.7        | 1.886    | 2.866  | 4.5      | 18.8 |
| 10 28         | 1 34.59                       | -6 39.4         | 2.041    | 2.987  | 7.0      | 20.2 | 10 28         | 1 33.82                       | +21 57.9        | 1.883    | 2.862  | 4.3      | 18.7 |
| 11 7          | 1 27.52                       | -6 42.1         | 2.095    | 2.990  | 9.7      | 20.4 | 11 7          | 1 25.65                       | +21 23.2        | 1.908    | 2.858  | 6.9      | 18.9 |
| 11 17         | 1 21.91                       | -6 27.0         | 2.172    | 2.994  | 12.4     | 20.6 | 11 17         | 1 19.09                       | +20 45.1        | 1.959    | 2.854  | 10.2     | 19.1 |
| 11 27         | 1 18.22                       | -5 54.5         | 2.271    | 2.998  | 14.7     | 20.8 | 11 27         | 1 14.77                       | +20 9.9         | 2.034    | 2.851  | 13.2     | 19.3 |
| <b>349661</b> | 2008 <i>VS</i> <sub>48</sub>  |                 | 10 20.3  | 305°11 | 0°0/20.3 | 16   | <b>406787</b> | 2008 <i>RH</i> <sub>109</sub> |                 | 10 20.3  | 337°12 | 0°9/19.5 | 18   |
| 9 18          | 2                             |                 |          |        |          |      |               |                               |                 |          |        |          |      |

EPHEMERIDES

10 20.3

10 20.4

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$              | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$         | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------|------------------|---------|------|---------------|-------------------------------|-----------------|----------|-------------|---------|------|
| <b>328777</b> | 2009 <i>UG</i> <sub>136</sub> | 10 20.3 296°67  |          | 3°7/24.4 18      |         |      | <b>155871</b> | 2001 <i>DG</i> <sub>40</sub>  | 10 20.3 208°11  |          | 0°4/20.9 18 |         |      |
| 9 18          | 2 1.23                        | +24 35.1        | 2.276    | 3.090            | 12.8    | 20.7 | 9 18          | 2 1.41                        | +14 18.2        | 2.707    | 3.553       | 10.0    | 20.8 |
| 9 28          | 1 56.44                       | +24 23.7        | 2.190    | 3.082            | 10.1    | 20.5 | 9 28          | 1 56.25                       | +13 46.9        | 2.625    | 3.548       | 7.3     | 20.6 |
| 10 8          | 1 49.98                       | +23 54.9        | 2.128    | 3.075            | 7.1     | 20.3 | 10 8          | 1 49.75                       | +13 6.3         | 2.569    | 3.542       | 4.3     | 20.4 |
| 10 18         | 1 42.45                       | +23 9.6         | 2.091    | 3.068            | 4.4     | 20.1 | 10 18         | 1 42.45                       | +12 19.1        | 2.542    | 3.537       | 1.1     | 20.1 |
| 10 28         | 1 34.72                       | +22 10.7        | 2.083    | 3.061            | 4.0     | 20.1 | 10 28         | 1 35.00                       | +11 28.8        | 2.545    | 3.530       | 2.4     | 20.2 |
| 11 7          | 1 27.64                       | +21 3.8         | 2.104    | 3.054            | 6.3     | 20.2 | 11 7          | 1 28.10                       | +10 39.8        | 2.578    | 3.524       | 5.6     | 20.4 |
| 11 17         | 1 21.99                       | +19 55.1        | 2.151    | 3.047            | 9.4     | 20.4 | 11 17         | 1 22.33                       | +9 56.2         | 2.640    | 3.517       | 8.6     | 20.6 |
| 11 27         | 1 18.31                       | +18 51.2        | 2.224    | 3.041            | 12.2    | 20.6 | 11 27         | 1 18.16                       | +9 21.5         | 2.726    | 3.510       | 11.1    | 20.8 |
| <b>318980</b> | 2005 <i>UJ</i> <sub>320</sub> | 10 20.3         |          | 7°44 0°5/20.7 18 |         |      | <b>485891</b> | 2012 <i>FA</i> <sub>48</sub>  | 10 20.3 116°44  |          | 1°8/18.3 18 |         |      |
| 9 18          | 2 1.92                        | +13 35.7        | 1.730    | 2.598            | 13.7    | 20.8 | 9 18          | 2 1.02                        | +6 26.1         | 2.434    | 3.303       | 10.2    | 21.8 |
| 9 28          | 1 57.17                       | +13 13.7        | 1.665    | 2.599            | 10.0    | 20.5 | 9 28          | 1 55.96                       | +5 40.7         | 2.374    | 3.311       | 7.2     | 21.6 |
| 10 8          | 1 50.46                       | +12 39.5        | 1.623    | 2.600            | 5.8     | 20.3 | 10 8          | 1 49.57                       | +4 51.0         | 2.340    | 3.319       | 4.1     | 21.4 |
| 10 18         | 1 42.56                       | +11 56.6        | 1.606    | 2.602            | 1.3     | 20.0 | 10 18         | 1 42.40                       | +4 0.9          | 2.335    | 3.327       | 1.8     | 21.3 |
| 10 28         | 1 34.49                       | +11 10.3        | 1.618    | 2.604            | 3.4     | 20.2 | 10 28         | 1 35.19                       | +3 15.2         | 2.359    | 3.334       | 3.9     | 21.4 |
| 11 7          | 1 27.31                       | +10 26.9        | 1.656    | 2.607            | 7.7     | 20.4 | 11 7          | 1 28.63                       | +2 37.9         | 2.412    | 3.342       | 6.9     | 21.6 |
| 11 17         | 1 21.86                       | +9 51.9         | 1.720    | 2.610            | 11.7    | 20.7 | 11 17         | 1 23.30                       | +2 12.1         | 2.492    | 3.349       | 9.8     | 21.8 |
| 11 27         | 1 18.73                       | +9 29.5         | 1.805    | 2.613            | 15.0    | 20.9 | 11 27         | 1 19.66                       | +1 59.6         | 2.595    | 3.356       | 12.2    | 22.0 |
| <b>225718</b> | 2001 <i>RL</i> <sub>56</sub>  | 10 20.3 315°00  |          | 1°9/21.5 18      |         |      | <b>156638</b> | 2002 <i>JQ</i> <sub>25</sub>  | 10 20.3 98°57   |          | 3°9/16.7 18 |         |      |
| 9 18          | 2 6.36                        | +15 1.5         | 1.369    | 2.239            | 16.5    | 20.0 | 9 18          | 2 3.36                        | -0 58.6         | 2.256    | 3.131       | 10.7    | 19.7 |
| 9 28          | 2 1.11                        | +15 15.3        | 1.292    | 2.224            | 12.4    | 19.7 | 9 28          | 1 57.69                       | -1 35.8         | 2.202    | 3.139       | 7.8     | 19.6 |
| 10 8          | 1 53.08                       | +15 14.9        | 1.235    | 2.210            | 7.6     | 19.4 | 10 8          | 1 50.55                       | -2 11.5         | 2.175    | 3.147       | 5.0     | 19.4 |
| 10 18         | 1 43.12                       | +15 1.0         | 1.202    | 2.195            | 2.8     | 19.1 | 10 18         | 1 42.59                       | -2 41.3         | 2.175    | 3.155       | 3.9     | 19.3 |
| 10 28         | 1 32.61                       | +14 37.7        | 1.195    | 2.182            | 4.2     | 19.2 | 10 28         | 1 34.60                       | -3 0.9          | 2.204    | 3.163       | 5.7     | 19.5 |
| 11 7          | 1 23.08                       | +14 11.2        | 1.214    | 2.169            | 9.4     | 19.4 | 11 7          | 1 27.35                       | -3 7.4          | 2.261    | 3.170       | 8.4     | 19.7 |
| 11 17         | 1 15.83                       | +13 48.8        | 1.256    | 2.156            | 14.3    | 19.7 | 11 17         | 1 21.48                       | -2 59.3         | 2.344    | 3.178       | 11.2    | 19.9 |
| 11 27         | 1 11.72                       | +13 36.8        | 1.318    | 2.144            | 18.5    | 19.9 | 11 27         | 1 17.45                       | -2 36.7         | 2.448    | 3.186       | 13.5    | 20.0 |
| <b>228055</b> | 2008 <i>JV</i> <sub>9</sub>   | 10 20.3 20°53   |          | 5°4/17.6 18      |         |      | <b>38316</b>  | 1999 <i>RB</i> <sub>113</sub> | 10 20.4 113°28  |          | 5°0/15.6 18 |         |      |
| 9 18          | 2 8.60                        | -0 58.4         | 1.190    | 2.085            | 16.7    | 19.4 | 9 18          | 2 3.56                        | +0 5.8          | 1.812    | 2.696       | 12.4    | 19.2 |
| 9 28          | 2 2.48                        | -1 16.3         | 1.143    | 2.090            | 12.2    | 19.1 | 9 28          | 1 58.07                       | -1 24.1         | 1.767    | 2.708       | 9.0     | 19.0 |
| 10 8          | 1 53.63                       | -1 30.8         | 1.118    | 2.095            | 7.8     | 18.9 | 10 8          | 1 50.84                       | -2 54.0         | 1.747    | 2.720       | 6.0     | 18.9 |
| 10 18         | 1 43.18                       | -1 35.3         | 1.116    | 2.101            | 5.4     | 18.8 | 10 18         | 1 42.65                       | -4 16.1         | 1.755    | 2.732       | 5.1     | 18.8 |
| 10 28         | 1 32.66                       | -1 23.8         | 1.139    | 2.108            | 8.0     | 19.0 | 10 28         | 1 34.47                       | -5 22.9         | 1.791    | 2.743       | 7.3     | 19.0 |
| 11 7          | 1 23.60                       | -0 53.4         | 1.186    | 2.116            | 12.4    | 19.2 | 11 7          | 1 27.23                       | -6 9.1          | 1.853    | 2.755       | 10.4    | 19.2 |
| 11 17         | 1 17.08                       | -0 4.2          | 1.254    | 2.124            | 16.5    | 19.5 | 11 17         | 1 21.67                       | -6 32.5         | 1.939    | 2.765       | 13.5    | 19.4 |
| 11 27         | 1 13.74                       | +1 2.1          | 1.342    | 2.134            | 20.0    | 19.8 | 11 27         | 1 18.26                       | -6 33.4         | 2.045    | 2.776       | 16.0    | 19.6 |
| <b>171292</b> | 2006 <i>GS</i> <sub>38</sub>  | 10 20.3 123°44  |          | 2°3/18.7 17      |         |      | <b>516200</b> | 2016 <i>SM</i> <sub>36</sub>  | 10 20.4 316°18  |          | 4°0/18.2 18 |         |      |
| 9 18          | 2 8.66                        | +7 21.6         | 1.473    | 2.350            | 15.1    | 20.2 | 9 18          | 2 8.80                        | +0 58.6         | 1.417    | 2.303       | 15.1    | 20.5 |
| 9 28          | 2 2.11                        | +6 35.0         | 1.421    | 2.362            | 10.8    | 20.0 | 9 28          | 2 2.69                        | +0 53.9         | 1.343    | 2.286       | 11.1    | 20.2 |
| 10 8          | 1 53.27                       | +5 40.8         | 1.393    | 2.373            | 6.1     | 19.8 | 10 8          | 1 53.91                       | +0 50.2         | 1.291    | 2.269       | 6.8     | 19.9 |
| 10 18         | 1 43.11                       | +4 45.2         | 1.391    | 2.384            | 2.3     | 19.6 | 10 18         | 1 43.31                       | +0 52.6         | 1.264    | 2.253       | 4.0     | 19.7 |
| 10 28         | 1 32.92                       | +3 55.6         | 1.416    | 2.395            | 5.3     | 19.8 | 10 28         | 1 32.25                       | +1 6.2          | 1.263    | 2.237       | 6.7     | 19.9 |
| 11 7          | 1 23.98                       | +3 18.8         | 1.468    | 2.404            | 9.9     | 20.1 | 11 7          | 1 22.17                       | +1 34.6         | 1.288    | 2.222       | 11.3    | 20.1 |
| 11 17         | 1 17.23                       | +2 58.8         | 1.544    | 2.414            | 14.0    | 20.4 | 11 17         | 1 14.31                       | +2 19.2         | 1.337    | 2.207       | 15.7    | 20.3 |
| 11 27         | 1 13.23                       | +2 57.6         | 1.640    | 2.423            | 17.3    | 20.6 | 11 27         | 1 9.46                        | +3 19.7         | 1.405    | 2.193       | 19.4    | 20.5 |
| <b>246403</b> | 2007 <i>UA</i> <sub>87</sub>  | 10 20.3 61°05   |          | 1°0/21.3 18      |         |      | <b>103718</b> | 2000 <i>CV</i> <sub>92</sub>  | 10 20.4 299°69  |          | 1°3/19.6 18 |         |      |
| 9 18          | 2 2.22                        | +17 0.8         | 1.712    | 2.570            | 14.3    | 20.4 | 9 18          | 2 5.71                        | +9 11.7         | 1.390    | 2.273       | 15.6    | 18.7 |
| 9 28          | 1 57.34                       | +16 9.7         | 1.651    | 2.578            | 10.6    | 20.2 | 9 28          | 2 0.56                        | +8 49.3         | 1.311    | 2.254       | 11.4    | 18.4 |
| 10 8          | 1 50.52                       | +15 2.1         | 1.613    | 2.587            | 6.3     | 20.0 | 10 8          | 1 52.75                       | +8 16.5         | 1.254    | 2.235       | 6.5     | 18.0 |
| 10 18         | 1 42.58                       | +13 42.3        | 1.601    | 2.595            | 1.9     | 19.7 | 10 18         | 1 43.10                       | +7 37.6         | 1.221    | 2.216       | 1.5     | 17.7 |
| 10 28         | 1 34.57                       | +12 17.6        | 1.618    | 2.604            | 3.3     | 19.8 | 10 28         | 1 32.92                       | +6 59.2         | 1.214    | 2.198       | 4.9     | 17.8 |
| 11 7          | 1 27.54                       | +10 56.2        | 1.662    | 2.613            | 7.6     | 20.1 | 11 7          | 1 23.68                       | +6 28.8         | 1.233    | 2.180       | 10.3    | 18.1 |
| 11 17         | 1 22.28                       | +9 45.5         | 1.732    | 2.622            | 11.6    | 20.4 | 11 17         | 1 16.60                       | +6 12.2         | 1.275    | 2.162       | 15.1    | 18.3 |
| 11 27         | 1 19.36                       | +8 50.9         | 1.824    | 2.631            | 14.9    | 20.6 | 11 27         | 1 12.53                       | +6 13.4         | 1.337    | 2.145       | 19.3    | 18.6 |
| <b>198797</b> | 2005 <i>EF</i> <sub>156</sub> | 10 20.3 298°88  |          | 2°0/19.0 18      |         |      | <b>415426</b> | 2013 <i>QP</i> <sub>16</sub>  | 10 20.4 234°57  |          | 6°2/24.9 18 |         |      |
| 9 18          | 2 6.25                        | +6 18.2         | 1.620    | 2.499            | 13.9    | 19.5 | 9 18          | 2 7.72                        | +26 36.7        | 1.457    | 2.280       | 18.2    | 20.8 |
| 9 28          | 2 0.59                        | +6 3.7          | 1.540    | 2.481            | 10.1    | 19.3 | 9 28          | 2 2.03                        | +26 51.6        | 1.384    | 2.277       | 14.7    | 20.6 |
| 10 8          | 1 52.59                       | +5 43.8         | 1.484    | 2.464            | 5.8     | 19.0 | 10 8          | 1 53.56                       | +26 40.6        | 1.330    | 2.275       | 10.7    | 20.4 |
| 10 18         | 1 43.02                       | +5 22.5         | 1.453    | 2.447            | 2.1     | 18.7 | 10 18         | 1 43.24                       | +26 2.1         | 1.299    | 2.272       | 7.2     | 20.2 |
| 10 28         | 1 33.04                       | +5 5.0          | 1.450    | 2.430            | 4.9     | 18.9 | 10 28         | 1 32.53                       | +24 59.1        | 1.294    | 2.269       | 6.4     | 20.1 |
| 11 7          | 1 23.88                       | +4 56.3         | 1.473    | 2.414            | 9.5     | 19.1 | 11 7          | 1 22.99                       | +23 40.1        | 1.315    | 2.266       | 9.2     | 20.3 |
| 11 17         | 1 16.62                       | +5 0.4          | 1.521    | 2.397            | 13.8    | 19.3 | 11 17         | 1 15.84                       | +22 16.0        | 1.360    | 2.263       | 13.2    | 20.5 |
| 11 27         | 1 12.01                       | +5 19.5         | 1.590    | 2.381            | 17.4    | 19.5 | 11 27         | 1 11.88                       | +20 58.0        | 1.427    | 2.260       | 16.9    | 20.7 |
| <b>153260</b> | 2001 <i>BM</i> <sub>67</sub>  | 10 20.3 155°96  |          | 6°6/28.9 18      |         |      | <b>484986</b> | 2009 <i>UE</i> <sub>88</sub>  | 10 20.4 12°83   |          | 5°4/17.5 18 |         |      |
| 9 18          | 2 5.21                        | +36 37.3        | 2.810    | 3.532            | 12.7    | 20.0 | 9 18          | 2 12.53                       | -6 19.9         | 1.870    | 2.736       | 13.0    | 19.9 |
| 9 28          | 1 59.16                       | +36 55.5        | 2.729    | 3.538            | 10.9    | 19.9 | 9 28          | 2 4.55                        | -6 6.7          | 1.811    | 2.738       | 9.8     | 19.7 |
| 10 8          | 1 51.47                       | +36 54.1        | 2.668    | 3.544            | 9.0     | 19.8 | 10 8          | 1 54.55                       | -5 45.0         | 1.776    | 2.741       | 6.8     | 19.5 |
| 10 18         | 1 42.77                       | +36 31.7        | 2.632    | 3.549            | 7.3     | 19.7 | 10 18         | 1 43.39                       | -5 11.4         | 1.770    | 2.744       | 5.4     | 19.5 |
| 10 28         | 1 33.90                       | +35 49.2        | 2.623    | 3.554            | 6.6     | 19.6 | 10 28         | 1 32.18                       | -4 23.5         | 1.793    | 2.748       | 7.0     | 19.6 |
| 11 7          | 1 25.73                       | +34 50.3        | 2.642    | 3.558            | 7.1     | 19.7 | 11 7          | 1 22.02                       | -3 21.0         | 1.845    | 2.753       | 10.1    | 19.8 |
| 11 17         | 1 18.98                       | +33 40.4        | 2.689    | 3.562            | 8.6     | 19.8 | 11 17         | 1 13.77                       | -2 5.5          | 1.922    | 2.758       | 13.2    | 20.0 |
| 11 27         | 1 14.19                       | +32 26.3        | 2.761    | 3.566            | 10.4    | 19.9 | 11 27         | 1 8.00                        | -0 39.1         | 2.022    | 2.763       | 15.8    | 20.2 |
| <b>278083</b> | 2007 <i>BP</i> <sub>5</sub>   | 10 20.3 297°47  |          | 0°6/20.0 18      |         |      | <b>452069</b> | 2014 <i>OD</i> <sub>334</sub> | 10 20.4 49°40   |          | 2°8/23.3 17 |         |      |
| 9 18          | 2 6.94                        | +10 2.8         | 1.410    | 2.288            | 15.6    | 21.0 | 9 18          | 2 1.24                        | +21 58          |          |             |         |      |

EPHEMERIDES

10 20.4

10 20.4

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$           | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$         | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------|---------------|---------|------|---------------|-------------------------------|-----------------|----------|-------------|---------|------|
| <b>119038</b> | 2001 <i>FE</i> <sub>87</sub>  | 10 20.4 102°24  |          | 2°8/17.4 18   |         |      | <b>170421</b> | 2003 <i>UY</i> <sub>72</sub>  | 10 20.4 42°82   |          | 0°6/20.8 18 |         |      |
| 9 18          | 2 1.95                        | + 2 48.0        | 2.430    | 3.303         | 10.1    | 19.7 | 9 18          | 2 5.38                        | +14 25.0        | 1.257    | 2.134       | 17.2    | 19.5 |
| 9 28          | 1 56.59                       | + 2 5.7         | 2.378    | 3.316         | 7.2     | 19.5 | 9 28          | 1 59.85                       | +13 51.4        | 1.224    | 2.162       | 12.4    | 19.3 |
| 10 8          | 1 49.91                       | + 1 21.9        | 2.351    | 3.328         | 4.3     | 19.4 | 10 8          | 1 51.98                       | +13 2.4         | 1.213    | 2.191       | 7.1     | 19.0 |
| 10 18         | 1 42.50                       | + 0 40.9        | 2.354    | 3.341         | 2.8     | 19.3 | 10 18         | 1 42.90                       | +12 3.4         | 1.225    | 2.220       | 1.6     | 18.8 |
| 10 28         | 1 35.07                       | + 0 6.9         | 2.386    | 3.353         | 4.6     | 19.4 | 10 28         | 1 34.02                       | +11 2.6         | 1.264    | 2.250       | 4.0     | 19.0 |
| 11 7          | 1 28.33                       | - 0 16.5        | 2.446    | 3.365         | 7.4     | 19.6 | 11 7          | 1 26.61                       | +10 8.5         | 1.328    | 2.281       | 9.0     | 19.4 |
| 11 17         | 1 22.85                       | - 0 27.4        | 2.533    | 3.377         | 10.1    | 19.8 | 11 17         | 1 21.55                       | + 9 27.6        | 1.415    | 2.311       | 13.3    | 19.7 |
| 11 27         | 1 19.05                       | - 0 24.6        | 2.642    | 3.389         | 12.4    | 20.0 | 11 27         | 1 19.30                       | + 9 3.7         | 1.524    | 2.342       | 16.8    | 20.1 |
| <b>134121</b> | 2004 <i>YE</i> <sub>30</sub>  | 10 20.4 127°47  |          | 1°4/19.0 18 R |         |      | <b>224760</b> | 2006 <i>DT</i> <sub>204</sub> | 10 20.4 344°77  |          | 2°4/18.9 18 |         |      |
| 9 18          | 2 4.27                        | + 9 12.2        | 1.936    | 2.804         | 12.5    | 20.8 | 9 18          | 2 7.91                        | + 3 0.6         | 1.862    | 2.735       | 12.7    | 19.3 |
| 9 28          | 1 58.58                       | + 8 20.7        | 1.878    | 2.815         | 8.9     | 20.6 | 9 28          | 2 1.41                        | + 3 12.2        | 1.792    | 2.729       | 9.2     | 19.1 |
| 10 8          | 1 51.15                       | + 7 21.3        | 1.845    | 2.825         | 4.9     | 20.4 | 10 8          | 1 52.90                       | + 3 23.6        | 1.746    | 2.724       | 5.3     | 18.8 |
| 10 18         | 1 42.74                       | + 6 18.8        | 1.840    | 2.834         | 1.5     | 20.2 | 10 18         | 1 43.12                       | + 3 37.6        | 1.727    | 2.720       | 2.4     | 18.6 |
| 10 28         | 1 34.29                       | + 5 19.5        | 1.863    | 2.843         | 4.1     | 20.4 | 10 28         | 1 33.11                       | + 3 57.0        | 1.738    | 2.715       | 4.7     | 18.8 |
| 11 7          | 1 26.72                       | + 4 29.2        | 1.915    | 2.852         | 7.9     | 20.6 | 11 7          | 1 23.96                       | + 4 24.4        | 1.776    | 2.712       | 8.6     | 19.0 |
| 11 17         | 1 20.77                       | + 3 52.3        | 1.993    | 2.860         | 11.4    | 20.9 | 11 17         | 1 16.53                       | + 5 1.0         | 1.841    | 2.709       | 12.2    | 19.2 |
| 11 27         | 1 16.94                       | + 3 31.3        | 2.094    | 2.869         | 14.3    | 21.1 | 11 27         | 1 11.47                       | + 5 47.7        | 1.928    | 2.706       | 15.3    | 19.4 |
| <b>229456</b> | 2005 <i>UN</i> <sub>190</sub> | 10 20.4 207°91  |          | 0°4/20.8 18   |         |      | <b>68919</b>  | 2002 <i>LL</i> <sub>3</sub>   | 10 20.4 11°35   |          | 6°4/12.6 18 |         |      |
| 9 18          | 2 5.68                        | +14 11.6        | 1.950    | 2.803         | 13.0    | 21.8 | 9 18          | 1 59.00                       | - 5 6.2         | 2.061    | 2.946       | 11.0    | 18.7 |
| 9 28          | 1 59.79                       | +13 39.3        | 1.872    | 2.799         | 9.6     | 21.5 | 9 28          | 1 54.76                       | - 7 0.5         | 2.012    | 2.947       | 8.5     | 18.5 |
| 10 8          | 1 51.96                       | +12 54.6        | 1.818    | 2.793         | 5.6     | 21.3 | 10 8          | 1 49.00                       | - 8 51.5        | 1.989    | 2.948       | 6.6     | 18.4 |
| 10 18         | 1 42.92                       | +12 0.5         | 1.792    | 2.787         | 1.3     | 21.0 | 10 18         | 1 42.35                       | -10 30.9        | 1.994    | 2.949       | 6.7     | 18.5 |
| 10 28         | 1 33.66                       | +11 2.3         | 1.795    | 2.781         | 3.2     | 21.1 | 10 28         | 1 35.61                       | -11 51.2        | 2.027    | 2.951       | 8.6     | 18.6 |
| 11 7          | 1 25.20                       | +10 6.4         | 1.827    | 2.774         | 7.5     | 21.4 | 11 7          | 1 29.60                       | -12 47.5        | 2.086    | 2.952       | 11.1    | 18.7 |
| 11 17         | 1 18.40                       | + 9 18.6        | 1.886    | 2.766         | 11.3    | 21.6 | 11 17         | 1 24.95                       | -13 18.2        | 2.167    | 2.954       | 13.6    | 18.9 |
| 11 27         | 1 13.85                       | + 8 43.7        | 1.967    | 2.758         | 14.5    | 21.8 | 11 27         | 1 22.16                       | -13 24.0        | 2.267    | 2.956       | 15.7    | 19.1 |
| <b>181605</b> | 2006 <i>WY</i> <sub>48</sub>  | 10 20.4 184°48  |          | 2°9/17.4 18   |         |      | <b>523308</b> | 2017 <i>BD</i> <sub>111</sub> | 10 20.4 0°45    |          | 4°5/24.6 17 |         |      |
| 9 18          | 2 3.12                        | + 2 44.3        | 2.357    | 3.229         | 10.4    | 20.6 | 9 18          | 2 1.69                        | +25 8.3         | 1.829    | 2.653       | 15.0    | 20.8 |
| 9 28          | 1 57.55                       | + 2 0.8         | 2.291    | 3.229         | 7.5     | 20.4 | 9 28          | 1 57.12                       | +25 2.2         | 1.755    | 2.652       | 11.9    | 20.6 |
| 10 8          | 1 50.52                       | + 1 15.4        | 2.252    | 3.228         | 4.5     | 20.2 | 10 8          | 1 50.53                       | +24 35.2        | 1.702    | 2.651       | 8.5     | 20.4 |
| 10 18         | 1 42.63                       | + 0 32.4        | 2.241    | 3.228         | 2.9     | 20.1 | 10 18         | 1 42.68                       | +23 47.7        | 1.674    | 2.651       | 5.4     | 20.2 |
| 10 28         | 1 34.64                       | - 0 3.6         | 2.260    | 3.227         | 4.8     | 20.2 | 10 28         | 1 34.61                       | +22 43.7        | 1.673    | 2.651       | 4.7     | 20.1 |
| 11 7          | 1 27.30                       | - 0 28.6        | 2.307    | 3.226         | 7.8     | 20.4 | 11 7          | 1 27.41                       | +21 30.0        | 1.699    | 2.652       | 7.3     | 20.3 |
| 11 17         | 1 21.28                       | - 0 40.3        | 2.380    | 3.224         | 10.7    | 20.6 | 11 17         | 1 21.97                       | +20 14.8        | 1.751    | 2.653       | 10.8    | 20.5 |
| 11 27         | 1 17.04                       | - 0 37.5        | 2.476    | 3.222         | 13.1    | 20.8 | 11 27         | 1 18.89                       | +19 5.9         | 1.827    | 2.655       | 14.0    | 20.7 |
| <b>299219</b> | 2005 <i>JP</i> <sub>75</sub>  | 10 20.4 145°32  |          | 0°1/20.3 18   |         |      | <b>356324</b> | 2010 <i>JZ</i> <sub>58</sub>  | 10 20.4 109°72  |          | 3°1/23.5 18 |         |      |
| 9 18          | 2 5.35                        | +11 34.7        | 2.140    | 2.997         | 11.9    | 21.1 | 9 18          | 2 4.81                        | +22 24.8        | 2.162    | 2.982       | 13.1    | 21.2 |
| 9 28          | 1 59.29                       | +11 15.1        | 2.074    | 3.004         | 8.6     | 20.9 | 9 28          | 1 58.92                       | +22 7.8         | 2.099    | 2.998       | 10.1    | 21.0 |
| 10 8          | 1 51.56                       | +10 47.1        | 2.033    | 3.010         | 4.9     | 20.6 | 10 8          | 1 51.35                       | +21 34.4        | 2.059    | 3.014       | 6.8     | 20.9 |
| 10 18         | 1 42.84                       | +10 13.6        | 2.021    | 3.016         | 0.9     | 20.4 | 10 18         | 1 42.82                       | +20 46.3        | 2.046    | 3.029       | 3.8     | 20.7 |
| 10 28         | 1 34.02                       | + 9 38.7        | 2.038    | 3.022         | 3.1     | 20.6 | 10 28         | 1 34.24                       | +19 47.3        | 2.063    | 3.044       | 3.5     | 20.7 |
| 11 7          | 1 25.98                       | + 9 7.2         | 2.084    | 3.028         | 6.9     | 20.8 | 11 7          | 1 26.53                       | +18 43.5        | 2.108    | 3.059       | 6.3     | 20.9 |
| 11 17         | 1 19.47                       | + 8 43.0        | 2.157    | 3.033         | 10.3    | 21.0 | 11 17         | 1 20.41                       | +17 41.1        | 2.181    | 3.073       | 9.5     | 21.2 |
| 11 27         | 1 14.99                       | + 8 29.4        | 2.253    | 3.037         | 13.1    | 21.2 | 11 27         | 1 16.36                       | +16 45.9        | 2.279    | 3.087       | 12.3    | 21.4 |
| <b>63414</b>  | 2001 <i>KF</i> <sub>55</sub>  | 10 20.4 115°33  |          | 5°2/16.6 18   |         |      | <b>293362</b> | 2007 <i>ET</i> <sub>2</sub>   | 10 20.4 262°87  |          | 0°4/20.7 18 |         |      |
| 9 18          | 2 7.66                        | - 0 36.3        | 1.578    | 2.461         | 14.0    | 18.9 | 9 18          | 2 2.84                        | +13 27.6        | 2.112    | 2.969       | 12.0    | 21.5 |
| 9 28          | 2 1.24                        | - 1 34.6        | 1.532    | 2.472         | 10.2    | 18.7 | 9 28          | 1 57.62                       | +13 5.7         | 2.036    | 2.964       | 8.8     | 21.3 |
| 10 8          | 1 52.73                       | - 2 31.7        | 1.509    | 2.483         | 6.6     | 18.6 | 10 8          | 1 50.70                       | +12 33.6        | 1.984    | 2.960       | 5.1     | 21.1 |
| 10 18         | 1 43.06                       | - 3 20.3        | 1.514    | 2.494         | 5.2     | 18.5 | 10 18         | 1 42.71                       | +11 53.8        | 1.960    | 2.955       | 1.2     | 20.8 |
| 10 28         | 1 33.40                       | - 4 53.4        | 1.545    | 2.504         | 7.5     | 18.7 | 10 28         | 1 34.53                       | +11 10.8        | 1.964    | 2.950       | 3.0     | 20.9 |
| 11 7          | 1 24.89                       | - 4 6.8         | 1.602    | 2.514         | 11.1    | 18.9 | 11 7          | 1 27.05                       | +10 29.7        | 1.997    | 2.945       | 6.9     | 21.2 |
| 11 17         | 1 18.39                       | - 3 59.2        | 1.683    | 2.524         | 14.5    | 19.2 | 11 17         | 1 21.03                       | + 9 55.3        | 2.057    | 2.940       | 10.4    | 21.4 |
| 11 27         | 1 14.45                       | - 3 31.3        | 1.783    | 2.533         | 17.3    | 19.4 | 11 27         | 1 17.02                       | + 9 31.4        | 2.140    | 2.935       | 13.4    | 21.6 |
| <b>328814</b> | 2009 <i>VW</i> <sub>83</sub>  | 10 20.4 260°82  |          | 1°6/18.9 18   |         |      | <b>265240</b> | 2004 <i>EM</i> <sub>13</sub>  | 10 20.4 228°40  |          | 0°3/20.1 18 |         |      |
| 9 18          | 2 3.19                        | + 6 0.1         | 2.363    | 3.230         | 10.5    | 20.5 | 9 18          | 2 7.35                        | +11 30.8        | 1.800    | 2.662       | 13.6    | 22.0 |
| 9 28          | 1 57.65                       | + 5 42.5        | 2.291    | 3.227         | 7.5     | 20.3 | 9 28          | 2 1.18                        | +11 5.0         | 1.720    | 2.652       | 9.9     | 21.7 |
| 10 8          | 1 50.61                       | + 5 21.3        | 2.246    | 3.224         | 4.3     | 20.1 | 10 8          | 1 52.86                       | +10 28.5        | 1.664    | 2.642       | 5.6     | 21.5 |
| 10 18         | 1 42.66                       | + 4 59.6        | 2.228    | 3.221         | 1.6     | 19.9 | 10 18         | 1 43.15                       | + 9 44.8        | 1.636    | 2.631       | 1.1     | 21.1 |
| 10 28         | 1 34.57                       | + 4 41.1        | 2.240    | 3.218         | 3.7     | 20.0 | 10 28         | 1 33.12                       | + 8 59.0        | 1.635    | 2.620       | 3.7     | 21.3 |
| 11 7          | 1 27.11                       | + 4 29.2        | 2.281    | 3.215         | 7.0     | 20.2 | 11 7          | 1 23.92                       | + 8 17.5        | 1.663    | 2.608       | 8.3     | 21.6 |
| 11 17         | 1 20.96                       | + 4 26.4        | 2.349    | 3.212         | 10.1    | 20.4 | 11 17         | 1 16.51                       | + 7 45.6        | 1.717    | 2.595       | 12.4    | 21.8 |
| 11 27         | 1 16.61                       | + 4 34.6        | 2.441    | 3.209         | 12.7    | 20.6 | 11 27         | 1 11.57                       | + 7 27.6        | 1.793    | 2.582       | 15.8    | 22.0 |
| <b>77393</b>  | 2001 <i>FK</i> <sub>155</sub> | 10 20.4 156°35  |          | 1°1/19.5 18   |         |      | <b>227487</b> | 2005 <i>XD</i> <sub>19</sub>  | 10 20.4 92°32   |          | 1°3/21.4 17 |         |      |
| 9 18          | 2 7.30                        | + 9 55.9        | 1.797    | 2.663         | 13.4    | 21.1 | 9 18          | 2 7.14                        | +16 9.7         | 1.598    | 2.454       | 15.3    | 20.6 |
| 9 28          | 2 0.92                        | + 9 15.4        | 1.735    | 2.670         | 9.6     | 20.9 | 9 28          | 2 0.96                        | +15 45.9        | 1.544    | 2.470       | 11.2    | 20.4 |
| 10 8          | 1 52.56                       | + 8 25.7        | 1.697    | 2.676         | 5.4     | 20.6 | 10 8          | 1 52.63                       | +15 6.7         | 1.514    | 2.487       | 6.7     | 20.2 |
| 10 18         | 1 43.04                       | + 7 31.4        | 1.687    | 2.682         | 1.3     | 20.4 | 10 18         | 1 43.08                       | +14 15.6        | 1.509    | 2.503       | 2.2     | 19.9 |
| 10 28         | 1 33.42                       | + 6 38.7        | 1.705    | 2.687         | 4.1     | 20.6 | 10 28         | 1 33.51                       | +13 18.6        | 1.532    | 2.518       | 3.5     | 20.1 |
| 11 7          | 1 24.77                       | + 5 53.8        | 1.752    | 2.691         | 8.3     | 20.8 | 11 7          | 1 25.10                       | +12 23.1        | 1.583    | 2.534       | 8.0     | 20.4 |
| 11 17         | 1 17.95                       | + 5 21.3        | 1.824    | 2.695         | 12.1    | 21.1 | 11 17         | 1 18.75                       | +11 35.8        | 1.659    | 2.549       | 12.0    | 20.7 |
| 11 27         | 1 13.50                       | + 5 4.4         | 1.919    | 2.699         | 15.3    | 21.3 | 11 27         | 1 15.00                       | +11 1.8         | 1.757    | 2.564       | 15.4    | 20.9 |
| <b>518508</b> | 2006 <i>EG</i> <sub>76</sub>  | 10 20.4 168°59  |          | 3°0/22.9 18   |         |      | <b>298582</b> | 2003 <i>YG</i> <sub>29</sub>  | 10 20.4 318°62  |          | 8°7/13.5 18 |         |      |
| 9 18          | 2 8.67                        | +20 18.6        |          |               |         |      |               |                               |                 |          |             |         |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$              | $\Delta$ | $r$   | $\beta$ | $V$  | 2020  | $\alpha_{2000}$ | $\delta_{2000}$ | $\Delta$      | $r$                           | $\beta$                      | $V$  |  |  |
|---------------|-------------------------------|------------------------------|----------|-------|---------|------|-------|-----------------|-----------------|---------------|-------------------------------|------------------------------|------|--|--|
| <b>175087</b> | 2004 <i>HO</i> <sub>26</sub>  | 10 20.4 182°57' 2.8"/17.9 18 |          |       |         |      |       |                 |                 | <b>112786</b> | 2002 <i>PM</i> <sub>161</sub> | 10 20.4 334°30' 0.5"/20.0 18 |      |  |  |
| 9 18          | 2 3.55                        | + 4 16.2                     | 1.961    | 2.838 | 11.9    | 20.1 | 9 18  | 2 4.07          | +10 46.6        | 1.618         | 2.492                         | 14.2                         | 19.7 |  |  |
| 9 28          | 1 58.13                       | + 3 34.7                     | 1.898    | 2.838 | 8.6     | 19.8 | 9 28  | 1 58.93         | +10 25.6        | 1.549         | 2.487                         | 10.3                         | 19.5 |  |  |
| 10 8          | 1 50.97                       | + 2 49.8                     | 1.859    | 2.838 | 5.0     | 19.6 | 10 8  | 1 51.62         | + 9 54.4        | 1.503         | 2.482                         | 5.8                          | 19.2 |  |  |
| 10 18         | 1 42.77                       | + 2 6.2                      | 1.848    | 2.838 | 2.8     | 19.5 | 10 18 | 1 42.94         | + 9 16.9        | 1.482         | 2.478                         | 1.1                          | 18.9 |  |  |
| 10 28         | 1 34.44                       | + 1 29.5                     | 1.865    | 2.838 | 5.0     | 19.6 | 10 28 | 1 34.02         | + 8 38.6        | 1.489         | 2.474                         | 3.9                          | 19.1 |  |  |
| 11 7          | 1 26.91                       | + 1 4.3                      | 1.910    | 2.838 | 8.6     | 19.9 | 11 7  | 1 26.01         | + 8 5.7         | 1.523         | 2.470                         | 8.6                          | 19.4 |  |  |
| 11 17         | 1 20.94                       | + 0 53.5                     | 1.981    | 2.838 | 11.9    | 20.1 | 11 17 | 1 19.87         | + 7 43.4        | 1.581         | 2.467                         | 12.8                         | 19.6 |  |  |
| 11 27         | 1 17.05                       | + 0 58.7                     | 2.073    | 2.838 | 14.8    | 20.3 | 11 27 | 1 16.26         | + 7 35.3        | 1.661         | 2.464                         | 16.3                         | 19.8 |  |  |
| <b>24229</b>  | 1999 <i>XC</i> <sub>90</sub>  | 10 20.4 95°26' 5.8"/27.7 18  |          |       |         |      |       |                 |                 | <b>431859</b> | 2008 <i>SW</i> <sub>100</sub> | 10 20.4 49°70' 3.1"/18.1 18  |      |  |  |
| 9 18          | 2 4.38                        | +33 1.5                      | 2.525    | 3.280 | 13.2    | 18.4 | 9 18  | 2 5.02          | + 6 38.5        | 1.268         | 2.160                         | 16.1                         | 20.2 |  |  |
| 9 28          | 1 58.56                       | +33 4.4                      | 2.458    | 3.298 | 11.0    | 18.2 | 9 28  | 1 59.56         | + 5 31.8        | 1.237         | 2.184                         | 11.4                         | 20.0 |  |  |
| 10 8          | 1 51.13                       | +32 47.2                     | 2.413    | 3.317 | 8.6     | 18.1 | 10 8  | 1 51.83         | + 4 18.8        | 1.227         | 2.209                         | 6.4                          | 19.8 |  |  |
| 10 18         | 1 42.79                       | +32 9.6                      | 2.394    | 3.335 | 6.6     | 18.0 | 10 18 | 1 42.94         | + 3 7.9         | 1.243         | 2.235                         | 3.1                          | 19.6 |  |  |
| 10 28         | 1 34.40                       | +31 13.8                     | 2.402    | 3.353 | 5.8     | 18.0 | 10 28 | 1 34.24         | + 2 8.1         | 1.284         | 2.261                         | 6.1                          | 19.9 |  |  |
| 11 7          | 1 26.82                       | +30 4.7                      | 2.438    | 3.371 | 6.7     | 18.1 | 11 7  | 1 26.95         | + 1 26.3        | 1.351         | 2.287                         | 10.6                         | 20.2 |  |  |
| 11 17         | 1 20.75                       | +28 48.7                     | 2.502    | 3.388 | 8.6     | 18.2 | 11 17 | 1 21.92         | + 1 5.8         | 1.440         | 2.314                         | 14.6                         | 20.5 |  |  |
| 11 27         | 1 16.66                       | +27 32.5                     | 2.592    | 3.405 | 10.8    | 18.4 | 11 27 | 1 19.61         | + 1 7.1         | 1.549         | 2.341                         | 17.8                         | 20.8 |  |  |
| <b>168391</b> | 1997 <i>WK</i> <sub>36</sub>  | 10 20.4 349°82' 7.2"/16.8 18 |          |       |         |      |       |                 |                 | <b>152133</b> | 2004 <i>TN</i> <sub>126</sub> | 10 20.4 315°20' 1.8"/18.3 18 |      |  |  |
| 9 18          | 2 3.06                        | - 4 20.5                     | 1.133    | 2.039 | 16.5    | 18.1 | 9 18  | 1 59.22         | + 4 49.7        | 2.917         | 3.786                         | 8.7                          | 19.8 |  |  |
| 9 28          | 1 58.85                       | - 4 38.7                     | 1.075    | 2.024 | 12.5    | 17.8 | 9 28  | 1 54.60         | + 4 23.1        | 2.844         | 3.781                         | 6.2                          | 19.6 |  |  |
| 10 8          | 1 51.83                       | - 4 49.0                     | 1.036    | 2.011 | 8.7     | 17.6 | 10 8  | 1 48.84         | + 3 54.2        | 2.798         | 3.776                         | 3.6                          | 19.5 |  |  |
| 10 18         | 1 42.98                       | - 4 43.7                     | 1.019    | 1.999 | 7.2     | 17.5 | 10 18 | 1 42.39         | + 3 25.6        | 2.780         | 3.772                         | 1.8                          | 19.3 |  |  |
| 10 28         | 1 33.78                       | - 4 16.1                     | 1.026    | 1.990 | 9.6     | 17.6 | 10 28 | 1 35.83         | + 3 0.7         | 2.793         | 3.767                         | 3.4                          | 19.4 |  |  |
| 11 7          | 1 25.78                       | - 3 23.8                     | 1.055    | 1.983 | 13.8    | 17.8 | 11 7  | 1 29.74         | + 2 42.4        | 2.835         | 3.763                         | 6.1                          | 19.6 |  |  |
| 11 17         | 1 20.21                       | - 2 7.8                      | 1.104    | 1.978 | 18.0    | 18.0 | 11 17 | 1 24.64         | + 2 32.9        | 2.903         | 3.758                         | 8.6                          | 19.8 |  |  |
| 11 27         | 1 17.84                       | - 0 31.8                     | 1.171    | 1.975 | 21.7    | 18.3 | 11 27 | 1 20.94         | + 2 33.8        | 2.996         | 3.754                         | 10.8                         | 19.9 |  |  |
| <b>454049</b> | 2012 <i>GU</i> <sub>27</sub>  | 10 20.4 153°12' 3.8"/16.1 18 |          |       |         |      |       |                 |                 | <b>317306</b> | 2002 <i>GH</i> <sub>110</sub> | 10 20.4 120°88' 0.1"/20.3 17 |      |  |  |
| 9 18          | 2 1.24                        | - 1 11.6                     | 2.529    | 3.404 | 9.7     | 21.3 | 9 18  | 2 11.11         | +11 0.9         | 1.506         | 2.372                         | 15.5                         | 20.6 |  |  |
| 9 28          | 1 56.12                       | - 2 0.0                      | 2.471    | 3.407 | 7.1     | 21.1 | 9 28  | 2 4.00          | +10 56.1        | 1.449         | 2.383                         | 11.3                         | 20.4 |  |  |
| 10 8          | 1 49.69                       | - 2 47.4                     | 2.439    | 3.409 | 4.7     | 21.0 | 10 8  | 1 54.47         | +10 41.2        | 1.415         | 2.393                         | 6.4                          | 20.1 |  |  |
| 10 18         | 1 42.52                       | - 3 29.4                     | 2.435    | 3.412 | 3.9     | 21.0 | 10 18 | 1 43.50         | +10 19.4        | 1.407         | 2.402                         | 1.2                          | 19.8 |  |  |
| 10 28         | 1 35.28                       | - 4 1.5                      | 2.460    | 3.414 | 5.5     | 21.1 | 10 28 | 1 32.42         | + 9 55.5        | 1.427         | 2.412                         | 4.0                          | 20.0 |  |  |
| 11 7          | 1 28.65                       | - 4 20.7                     | 2.514    | 3.417 | 8.0     | 21.2 | 11 7  | 1 22.58         | + 9 35.3        | 1.474         | 2.421                         | 8.9                          | 20.4 |  |  |
| 11 17         | 1 23.21                       | - 4 25.2                     | 2.593    | 3.419 | 10.5    | 21.4 | 11 17 | 1 14.98         | + 9 23.7        | 1.546         | 2.429                         | 13.1                         | 20.6 |  |  |
| 11 27         | 1 19.39                       | - 4 14.8                     | 2.694    | 3.421 | 12.6    | 21.6 | 11 27 | 1 10.26         | + 9 24.3        | 1.639         | 2.438                         | 16.7                         | 20.9 |  |  |
| <b>304969</b> | 2007 <i>TN</i> <sub>132</sub> | 10 20.4 98°34' 0.7"/19.8 18  |          |       |         |      |       |                 |                 | <b>344753</b> | 2003 <i>UT</i> <sub>326</sub> | 10 20.4 311°06' 1.3"/21.5 18 |      |  |  |
| 9 18          | 2 4.96                        | +10 7.2                      | 1.812    | 2.680 | 13.2    | 21.3 | 9 18  | 2 1.77          | +17 22.3        | 1.597         | 2.458                         | 15.0                         | 20.8 |  |  |
| 9 28          | 1 59.28                       | + 9 41.5                     | 1.749    | 2.685 | 9.5     | 21.1 | 9 28  | 1 57.38         | +16 37.3        | 1.519         | 2.448                         | 11.2                         | 20.5 |  |  |
| 10 8          | 1 51.67                       | + 9 7.4                      | 1.710    | 2.689 | 5.3     | 20.9 | 10 8  | 1 50.80         | +15 33.2        | 1.465         | 2.438                         | 6.8                          | 20.3 |  |  |
| 10 18         | 1 42.92                       | + 8 28.4                     | 1.698    | 2.693 | 1.1     | 20.6 | 10 18 | 1 42.80         | +14 13.7        | 1.435         | 2.429                         | 2.2                          | 20.0 |  |  |
| 10 28         | 1 34.04                       | + 7 50.0                     | 1.714    | 2.698 | 3.8     | 20.8 | 10 28 | 1 34.52         | +12 46.0        | 1.433         | 2.419                         | 3.5                          | 20.0 |  |  |
| 11 7          | 1 26.07                       | + 7 17.5                     | 1.758    | 2.702 | 8.0     | 21.0 | 11 7  | 1 27.14         | +11 19.5        | 1.457         | 2.411                         | 8.3                          | 20.3 |  |  |
| 11 17         | 1 19.82                       | + 6 55.3                     | 1.828    | 2.706 | 11.7    | 21.3 | 11 17 | 1 21.62         | +10 2.9         | 1.507         | 2.402                         | 12.7                         | 20.5 |  |  |
| 11 27         | 1 15.87                       | + 6 46.5                     | 1.920    | 2.710 | 14.9    | 21.5 | 11 27 | 1 18.65         | + 9 3.0         | 1.578         | 2.394                         | 16.4                         | 20.8 |  |  |
| <b>461331</b> | 2015 <i>XX</i> <sub>278</sub> | 10 20.4 63°72' 5.0"/15.9 18  |          |       |         |      |       |                 |                 | <b>321461</b> | 2009 <i>RG</i> <sub>28</sub>  | 10 20.4 82°29' 3.5"/23.1 16  |      |  |  |
| 9 18          | 2 3.95                        | - 4 11.1                     | 2.122    | 2.999 | 11.2    | 20.8 | 9 18  | 2 8.66          | +21 24.5        | 1.445         | 2.288                         | 17.3                         | 20.7 |  |  |
| 9 28          | 1 58.21                       | - 4 49.2                     | 2.073    | 3.006 | 8.3     | 20.7 | 9 28  | 2 2.26          | +21 10.1        | 1.396         | 2.310                         | 13.2                         | 20.5 |  |  |
| 10 8          | 1 50.92                       | - 5 23.1                     | 2.048    | 3.014 | 5.9     | 20.5 | 10 8  | 1 53.45         | +20 34.0        | 1.368         | 2.331                         | 8.6                          | 20.3 |  |  |
| 10 18         | 1 42.76                       | - 5 47.9                     | 2.050    | 3.022 | 5.1     | 20.5 | 10 18 | 1 43.28         | +19 38.3        | 1.365         | 2.352                         | 4.4                          | 20.1 |  |  |
| 10 28         | 1 34.58                       | - 5 59.3                     | 2.081    | 3.029 | 6.8     | 20.6 | 10 28 | 1 33.17         | +18 29.4        | 1.388         | 2.373                         | 4.3                          | 20.2 |  |  |
| 11 7          | 1 27.20                       | - 5 54.6                     | 2.139    | 3.037 | 9.4     | 20.8 | 11 7  | 1 24.42         | +17 16.6        | 1.439         | 2.393                         | 8.3                          | 20.5 |  |  |
| 11 17         | 1 21.30                       | - 5 33.4                     | 2.221    | 3.045 | 12.1    | 21.0 | 11 17 | 1 18.02         | +16 8.7         | 1.514         | 2.413                         | 12.4                         | 20.8 |  |  |
| 11 27         | 1 17.34                       | - 4 56.3                     | 2.325    | 3.053 | 14.4    | 21.2 | 11 27 | 1 14.51         | +15 13.3        | 1.612         | 2.433                         | 15.9                         | 21.0 |  |  |
| <b>516126</b> | 2015 <i>UO</i> <sub>62</sub>  | 10 20.4 359°19' 3.1"/18.3 18 |          |       |         |      |       |                 |                 | <b>127505</b> | 2002 <i>TF</i> <sub>80</sub>  | 10 20.4 323°61' 6.1"/15.7 18 |      |  |  |
| 9 18          | 2 5.30                        | + 3 2.2                      | 1.635    | 2.518 | 13.6    | 20.2 | 9 18  | 2 3.83          | - 3 22.1        | 1.636         | 2.524                         | 13.3                         | 19.0 |  |  |
| 9 28          | 1 59.70                       | + 2 48.6                     | 1.574    | 2.516 | 9.8     | 19.9 | 9 28  | 1 58.68         | - 4 15.0        | 1.574         | 2.514                         | 10.0                         | 18.7 |  |  |
| 10 8          | 1 51.99                       | + 2 33.4                     | 1.536    | 2.515 | 5.8     | 19.7 | 10 8  | 1 51.45         | - 5 4.8         | 1.535         | 2.505                         | 7.0                          | 18.5 |  |  |
| 10 18         | 1 42.99                       | + 2 21.2                     | 1.524    | 2.515 | 3.1     | 19.5 | 10 18 | 1 42.92         | - 5 44.4        | 1.522         | 2.496                         | 6.2                          | 18.5 |  |  |
| 10 28         | 1 33.83                       | + 2 16.6                     | 1.539    | 2.515 | 5.5     | 19.7 | 10 28 | 1 34.19         | - 6 6.9         | 1.535         | 2.488                         | 8.3                          | 18.6 |  |  |
| 11 7          | 1 25.62                       | + 2 23.6                     | 1.581    | 2.515 | 9.5     | 19.9 | 11 7  | 1 26.35         | - 6 8.1         | 1.573         | 2.479                         | 11.7                         | 18.8 |  |  |
| 11 17         | 1 19.29                       | + 2 44.1                     | 1.647    | 2.517 | 13.3    | 20.2 | 11 17 | 1 20.34         | - 5 46.8        | 1.634         | 2.472                         | 15.0                         | 19.0 |  |  |
| 11 27         | 1 15.43                       | + 3 18.9                     | 1.735    | 2.518 | 16.5    | 20.4 | 11 27 | 1 16.76         | - 5 4.2         | 1.714         | 2.464                         | 17.9                         | 19.2 |  |  |
| <b>26720</b>  | Yangxinyan                    | 10 20.4 196°58' 0.4"/20.7 18 |          |       |         |      |       |                 |                 | <b>61868</b>  | 2000 <i>QN</i> <sub>212</sub> | 10 20.4 1°73' 0.1"/20.4 18   |      |  |  |
| 9 18          | 2 7.45                        | +13 24.9                     | 1.761    | 2.620 | 14.0    | 19.6 | 9 18  | 2 2.90          | +12 15.9        | 1.745         | 2.614                         | 13.6                         | 19.5 |  |  |
| 9 28          | 2 1.23                        | +13 0.7                      | 1.689    | 2.618 | 10.2    | 19.4 | 9 28  | 1 57.93         | +11 56.5        | 1.679         | 2.614                         | 9.9                          | 19.3 |  |  |
| 10 8          | 1 52.88                       | +12 24.2                     | 1.640    | 2.615 | 5.9     | 19.1 | 10 8  | 1 50.98         | +11 26.4        | 1.635         | 2.614                         | 5.7                          | 19.0 |  |  |
| 10 18         | 1 43.18                       | +11 38.5                     | 1.617    | 2.612 | 1.3     | 18.8 | 10 18 | 1 42.83         | +10 49.0        | 1.618         | 2.614                         | 1.1                          | 18.7 |  |  |
| 10 28         | 1 33.24                       | +10 49.1                     | 1.623    | 2.609 | 3.5     | 19.0 | 10 28 | 1 34.49         | +10 9.4         | 1.629         | 2.614                         | 3.5                          | 18.9 |  |  |
| 11 7          | 1 24.23                       | +10 2.3                      | 1.658    | 2.605 | 8.0     | 19.2 | 11 7  | 1 27.02         | + 9 33.4        | 1.666         | 2.615                         | 7.8                          | 19.2 |  |  |
| 11 17         | 1 17.07                       | + 9 24.1                     | 1.718    | 2.600 | 12.1    | 19.5 | 11 17 | 1 21.28         | + 9 6.1         | 1.729         | 2.617                         | 11.8                         | 19.4 |  |  |
| 11 27         | 1 12.41                       | + 8 59.0                     | 1.801    | 2.595 | 15.5    | 19.7 | 11 27 | 1 17.86         | + 8 51.4        | 1.814         | 2.618                         | 15.1                         | 19.6 |  |  |
| <b>34750</b>  | 2001 <i>QB</i> <sub>97</sub>  | 10 20.4 316°97' 0.8"/19.4 18 |          |       |         |      |       |                 |                 | <b>480648</b> | 2015 <i>NG</i> <sub>23</sub>  | 10 20.4 249°62' 3.8"/24.1 18 |      |  |  |
| 9 18          | 1 58.80                       | +11 1.7                      | 2.282    | 3.149 | 10.9    | 18.6 | 9 18  | 2 3.09          | +24 35.6        | 1             |                               |                              |      |  |  |

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| 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  | 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  |
|---------------|------------------------|-----------------|----------------|----------|---------|------|---------------|------------------------|-----------------|----------------|----------|---------|------|
| <b>357481</b> | 2004 GC <sub>46</sub>  |                 | 10 20.4 220°07 | 0°4/20.1 | 18      |      | <b>387375</b> | 2012 XJ <sub>131</sub> |                 | 10 20.4 35°30  | 2°8/18.2 | 18      |      |
| 9 18          | 2 6.07                 | + 9 57.8        | 2.070          | 2.931    | 12.1    | 21.8 | 9 18          | 2 2.87                 | + 6 45.0        | 1.431          | 2.320    | 14.8    | 20.0 |
| 9 28          | 1 59.98                | + 9 50.8        | 1.996          | 2.928    | 8.8     | 21.6 | 9 28          | 1 58.07                | + 5 44.4        | 1.381          | 2.328    | 10.5    | 19.8 |
| 10 8          | 1 52.08                | + 9 36.8        | 1.947          | 2.925    | 5.0     | 21.4 | 10 8          | 1 51.09                | + 4 36.5        | 1.355          | 2.336    | 6.0     | 19.6 |
| 10 18         | 1 43.05                | + 9 18.5        | 1.926          | 2.921    | 0.9     | 21.1 | 10 18         | 1 42.87                | + 3 28.4        | 1.353          | 2.345    | 2.8     | 19.4 |
| 10 28         | 1 33.81                | + 8 59.4        | 1.934          | 2.918    | 3.3     | 21.3 | 10 28         | 1 34.59                | + 2 28.5        | 1.378          | 2.355    | 5.8     | 19.6 |
| 11 7          | 1 25.32                | + 8 43.8        | 1.971          | 2.914    | 7.2     | 21.5 | 11 7          | 1 27.43                | + 1 44.0        | 1.428          | 2.365    | 10.1    | 19.9 |
| 11 17         | 1 18.38                | + 8 35.1        | 2.034          | 2.910    | 10.8    | 21.7 | 11 17         | 1 22.28                | + 1 19.1        | 1.502          | 2.375    | 14.1    | 20.2 |
| 11 27         | 1 13.56                | + 8 36.3        | 2.121          | 2.906    | 13.8    | 21.9 | 11 27         | 1 19.69                | + 1 15.4        | 1.596          | 2.386    | 17.4    | 20.4 |
| <b>26324</b>  | 1998 VG <sub>16</sub>  |                 | 10 20.4 60°21  | 0°3/20.8 | 18      |      | <b>164566</b> | 2006 KL <sub>68</sub>  |                 | 10 20.4 5°94   | 6°6/17.9 | 18      |      |
| 9 18          | 1 59.88                | +16 39.1        | 2.165          | 3.016    | 12.0    | 18.8 | 9 18          | 2 4.90                 | - 3 35.2        | 0.948          | 1.860    | 18.3    | 17.9 |
| 9 28          | 1 55.38                | +15 19.4        | 2.096          | 3.022    | 8.8     | 18.6 | 9 28          | 2 0.32                 | - 3 23.7        | 0.907          | 1.860    | 13.7    | 17.6 |
| 10 8          | 1 49.37                | +13 45.0        | 2.053          | 3.028    | 5.1     | 18.4 | 10 8          | 1 52.68                | - 3 2.5         | 0.884          | 1.863    | 9.0     | 17.4 |
| 10 18         | 1 42.51                | +12 1.1         | 2.039          | 3.034    | 1.2     | 18.1 | 10 18         | 1 43.19                | - 2 25.8        | 0.883          | 1.869    | 6.6     | 17.3 |
| 10 28         | 1 35.59                | +10 14.6        | 2.055          | 3.040    | 2.9     | 18.3 | 10 28         | 1 33.63                | - 1 29.5        | 0.904          | 1.877    | 9.0     | 17.5 |
| 11 7          | 1 29.41                | + 8 33.2        | 2.100          | 3.046    | 6.7     | 18.5 | 11 7          | 1 25.67                | - 0 13.7        | 0.947          | 1.887    | 13.5    | 17.7 |
| 11 17         | 1 24.62                | + 7 3.5         | 2.173          | 3.053    | 10.1    | 18.8 | 11 17         | 1 20.53                | + 1 18.9        | 1.010          | 1.900    | 17.9    | 18.0 |
| 11 27         | 1 21.69                | + 5 50.4        | 2.271          | 3.059    | 12.9    | 19.0 | 11 27         | 1 18.84                | + 3 4.4         | 1.091          | 1.915    | 21.7    | 18.4 |
| <b>212418</b> | 2006 KD <sub>113</sub> |                 | 10 20.4 160°07 | 0°6/20.9 | 17      |      | <b>452256</b> | 2015 TK <sub>120</sub> |                 | 10 20.4 253°29 | 1°2/18.9 | 18      |      |
| 9 18          | 2 7.95                 | +15 19.7        | 1.741          | 2.594    | 14.4    | 21.2 | 9 18          | 1 59.38                | +10 49.6        | 2.542          | 3.404    | 10.1    | 21.2 |
| 9 28          | 2 1.52                 | +14 34.6        | 1.676          | 2.602    | 10.5    | 21.0 | 9 28          | 1 54.90                | + 9 30.3        | 2.460          | 3.394    | 7.2     | 21.0 |
| 10 8          | 1 52.99                | +13 34.5        | 1.634          | 2.608    | 6.2     | 20.7 | 10 8          | 1 49.10                | + 8 1.5         | 2.405          | 3.384    | 4.0     | 20.8 |
| 10 18         | 1 43.23                | +12 23.5        | 1.619          | 2.614    | 1.5     | 20.4 | 10 18         | 1 42.49                | + 6 27.9        | 2.380          | 3.374    | 1.2     | 20.6 |
| 10 28         | 1 33.35                | +11 8.2         | 1.633          | 2.619    | 3.5     | 20.6 | 10 28         | 1 35.73                | + 4 55.5        | 2.385          | 3.364    | 3.4     | 20.8 |
| 11 7          | 1 24.51                | + 9 56.6        | 1.676          | 2.623    | 8.0     | 20.9 | 11 7          | 1 29.53                | + 3 30.4        | 2.421          | 3.354    | 6.7     | 21.0 |
| 11 17         | 1 17.60                | + 8 55.7        | 1.745          | 2.627    | 12.0    | 21.1 | 11 17         | 1 24.46                | + 2 17.6        | 2.484          | 3.343    | 9.7     | 21.1 |
| 11 27         | 1 13.18                | + 8 10.4        | 1.837          | 2.629    | 15.4    | 21.4 | 11 27         | 1 21.00                | + 1 20.6        | 2.571          | 3.333    | 12.3    | 21.3 |
| <b>424056</b> | 2007 BV <sub>80</sub>  |                 | 10 20.4 140°70 | 1°7/18.9 | 16      |      | <b>52903</b>  | 1998 SG <sub>74</sub>  |                 | 10 20.4 314°13 | 2°2/18.9 | 18      |      |
| 9 18          | 2 6.60                 | + 8 6.7         | 1.909          | 2.776    | 12.7    | 21.9 | 9 18          | 2 5.88                 | + 6 55.1        | 1.362          | 2.248    | 15.5    | 18.9 |
| 9 28          | 2 0.30                 | + 7 18.9        | 1.852          | 2.788    | 9.0     | 21.7 | 9 28          | 2 0.63                 | + 6 28.8        | 1.293          | 2.238    | 11.3    | 18.6 |
| 10 8          | 1 52.19                | + 6 24.1        | 1.819          | 2.799    | 5.0     | 21.5 | 10 8          | 1 52.79                | + 5 54.8        | 1.246          | 2.228    | 6.4     | 18.3 |
| 10 18         | 1 43.06                | + 5 27.3        | 1.815          | 2.809    | 1.8     | 21.3 | 10 18         | 1 43.25                | + 5 18.5        | 1.224          | 2.218    | 2.3     | 18.0 |
| 10 28         | 1 33.90                | + 4 34.5        | 1.840          | 2.819    | 4.3     | 21.5 | 10 28         | 1 33.34                | + 4 46.7        | 1.227          | 2.208    | 5.5     | 18.2 |
| 11 7          | 1 25.66                | + 3 51.3        | 1.893          | 2.828    | 8.2     | 21.7 | 11 7          | 1 24.48                | + 4 26.2        | 1.256          | 2.199    | 10.5    | 18.5 |
| 11 17         | 1 19.13                | + 3 21.6        | 1.973          | 2.836    | 11.7    | 22.0 | 11 17         | 1 17.82                | + 4 21.7        | 1.308          | 2.191    | 15.1    | 18.7 |
| 11 27         | 1 14.81                | + 3 7.8         | 2.074          | 2.844    | 14.6    | 22.2 | 11 27         | 1 14.12                | + 4 35.5        | 1.380          | 2.182    | 19.0    | 19.0 |
| <b>382076</b> | 2011 FA <sub>18</sub>  |                 | 10 20.4 169°85 | 0°9/21.2 | 18      |      | <b>367316</b> | 2007 YX <sub>70</sub>  |                 | 10 20.4 356°33 | 5°3/17.7 | 17      |      |
| 9 18          | 2 6.45                 | +15 30.6        | 1.895          | 2.745    | 13.5    | 21.7 | 9 18          | 2 5.36                 | + 1 18.5        | 0.984          | 1.893    | 18.1    | 19.7 |
| 9 28          | 2 0.36                 | +15 2.3         | 1.825          | 2.749    | 10.0    | 21.4 | 9 28          | 2 0.75                 | + 0 47.3        | 0.934          | 1.888    | 13.2    | 19.4 |
| 10 8          | 1 52.33                | +14 20.5        | 1.779          | 2.751    | 5.9     | 21.2 | 10 8          | 1 53.02                | + 0 15.5        | 0.903          | 1.885    | 8.2     | 19.1 |
| 10 18         | 1 43.11                | +13 28.3        | 1.760          | 2.754    | 1.7     | 20.9 | 10 18         | 1 43.30                | - 0 8.4         | 0.894          | 1.883    | 5.3     | 19.0 |
| 10 28         | 1 33.74                | +12 30.8        | 1.770          | 2.756    | 3.2     | 21.1 | 10 28         | 1 33.32                | - 0 15.8        | 0.907          | 1.882    | 8.4     | 19.1 |
| 11 7          | 1 25.25                | +11 34.6        | 1.808          | 2.757    | 7.4     | 21.3 | 11 7          | 1 24.83                | - 0 1.3         | 0.942          | 1.882    | 13.5    | 19.4 |
| 11 17         | 1 18.51                | +10 45.6        | 1.874          | 2.758    | 11.2    | 21.6 | 11 17         | 1 19.12                | + 0 36.5        | 0.997          | 1.884    | 18.4    | 19.7 |
| 11 27         | 1 14.08                | +10 8.7         | 1.962          | 2.758    | 14.4    | 21.8 | 11 27         | 1 16.93                | + 1 36.3        | 1.069          | 1.886    | 22.4    | 20.0 |
| <b>317241</b> | 2002 CJ <sub>220</sub> |                 | 10 20.4 196°31 | 0°3/20.7 | 18      |      | <b>365557</b> | 2010 TC <sub>29</sub>  |                 | 10 20.4 240°15 | 1°1/21.5 | 18      |      |
| 9 18          | 2 6.08                 | +13 5.2         | 1.961          | 2.817    | 12.9    | 21.3 | 9 18          | 2 3.91                 | +15 28.7        | 2.294          | 3.139    | 11.6    | 21.5 |
| 9 28          | 2 0.08                 | +12 44.2        | 1.887          | 2.815    | 9.4     | 21.0 | 9 28          | 1 58.39                | +15 15.1        | 2.209          | 3.129    | 8.6     | 21.3 |
| 10 8          | 1 52.17                | +12 12.4        | 1.837          | 2.813    | 5.5     | 20.8 | 10 8          | 1 51.19                | +14 50.6        | 2.149          | 3.120    | 5.2     | 21.1 |
| 10 18         | 1 43.09                | +11 32.8        | 1.815          | 2.810    | 1.2     | 20.5 | 10 18         | 1 42.93                | +14 17.1        | 2.116          | 3.109    | 1.7     | 20.8 |
| 10 28         | 1 33.79                | +10 50.0        | 1.822          | 2.807    | 3.2     | 20.7 | 10 28         | 1 34.42                | +13 38.2        | 2.113          | 3.099    | 2.8     | 20.9 |
| 11 7          | 1 25.31                | +10 9.4         | 1.857          | 2.804    | 7.4     | 20.9 | 11 7          | 1 26.53                | +12 58.4        | 2.139          | 3.088    | 6.4     | 21.1 |
| 11 17         | 1 18.47                | + 9 36.3        | 1.919          | 2.800    | 11.1    | 21.1 | 11 17         | 1 20.02                | +12 22.5        | 2.193          | 3.077    | 9.8     | 21.3 |
| 11 27         | 1 13.88                | + 9 14.5        | 2.004          | 2.796    | 14.3    | 21.4 | 11 27         | 1 15.44                | +11 54.7        | 2.270          | 3.066    | 12.7    | 21.5 |
| <b>260270</b> | 2004 SC <sub>54</sub>  |                 | 10 20.4 44°29  | 1°1/21.6 | 18      |      | <b>15129</b>  | Sparks                 |                 | 10 20.4 4°64   | 3°0/22.0 | 18      |      |
| 9 18          | 2 0.90                 | +17 13.7        | 1.951          | 2.803    | 13.1    | 20.4 | 9 18          | 2 3.65                 | +16 7.0         | 1.016          | 1.904    | 19.5    | 16.6 |
| 9 28          | 1 56.28                | +16 28.7        | 1.886          | 2.811    | 9.7     | 20.2 | 9 28          | 1 59.62                | +16 35.9        | 0.962          | 1.902    | 14.7    | 16.3 |
| 10 8          | 1 49.96                | +15 28.9        | 1.846          | 2.818    | 5.8     | 19.9 | 10 8          | 1 52.44                | +16 46.2        | 0.927          | 1.903    | 9.3     | 16.0 |
| 10 18         | 1 42.64                | +14 18.0        | 1.832          | 2.826    | 1.9     | 19.7 | 10 18         | 1 43.21                | +16 38.5        | 0.913          | 1.905    | 4.0     | 15.8 |
| 10 28         | 1 35.24                | +13 2.0         | 1.847          | 2.834    | 2.9     | 19.8 | 10 28         | 1 33.64                | +16 17.5        | 0.921          | 1.909    | 4.8     | 15.8 |
| 11 7          | 1 28.67                | +11 48.0        | 1.891          | 2.842    | 6.9     | 20.1 | 11 7          | 1 25.50                | +15 51.4        | 0.953          | 1.914    | 10.2    | 16.2 |
| 11 17         | 1 23.65                | +10 42.2        | 1.960          | 2.850    | 10.5    | 20.3 | 11 17         | 1 20.15                | +15 28.7        | 1.005          | 1.921    | 15.4    | 16.5 |
| 11 27         | 1 20.70                | + 9 49.7        | 2.054          | 2.859    | 13.5    | 20.5 | 11 27         | 1 18.37                | +15 16.7        | 1.076          | 1.929    | 19.8    | 16.8 |
| <b>363357</b> | 2002 RD <sub>146</sub> |                 | 10 20.4 40°12  | 3°3/17.3 | 18      |      | <b>461274</b> | 2015 XB <sub>63</sub>  |                 | 10 20.4 11°27  | 7°9/13.4 | 18      |      |
| 9 18          | 2 0.98                 | + 6 33.5        | 1.565          | 2.453    | 13.8    | 20.0 | 9 18          | 2 3.43                 | -11 40.8        | 1.944          | 2.818    | 12.2    | 20.0 |
| 9 28          | 1 56.54                | + 5 2.9         | 1.515          | 2.461    | 9.8     | 19.8 | 9 28          | 1 58.03                | -12 36.9        | 1.899          | 2.819    | 9.8     | 19.9 |
| 10 8          | 1 50.17                | + 3 24.7        | 1.489          | 2.470    | 5.6     | 19.6 | 10 8          | 1 50.93                | -13 22.4        | 1.878          | 2.821    | 8.2     | 19.8 |
| 10 18         | 1 42.68                | + 1 47.4        | 1.489          | 2.480    | 3.3     | 19.5 | 10 18         | 1 42.87                | -13 50.9        | 1.882          | 2.823    | 8.1     | 19.8 |
| 10 28         | 1 35.15                | + 0 20.4        | 1.517          | 2.489    | 6.1     | 19.7 | 10 28         | 1 34.77                | -13 57.5        | 1.912          | 2.826    | 9.6     | 19.9 |
| 11 7          | 1 28.63                | - 0 48.5        | 1.571          | 2.499    | 10.1    | 19.9 | 11 7          | 1 27.54                | -13 40.3        | 1.967          | 2.829    | 11.9    | 20.0 |
| 11 17         | 1 23.91                | - 1 34.8        | 1.649          | 2.509    | 13.8    | 20.2 | 11 17         | 1 21.90                | -13 0.2         | 2.044          | 2.832    | 14.3    | 20.2 |
| 11 27         | 1 21.51                | - 1 56.9        | 1.747          | 2.520    | 16.8    | 20.4 | 11 27         | 1 18.35                | -12 0.0         | 2.140          | 2.835    | 16.3    | 20.4 |
| <b>298691</b> | 2004 DY <sub>67</sub>  |                 | 10 20.4 99°11  | 1°5/19.1 | 18      |      | <b>1496</b>   | Turku                  |                 | 10 20.4 73°71  | 2°1/21.8 | 18      | R    |
| 9 18          | 2 4.66                 | + 7 48.4        | 1.897          | 2.768    | 12.5    |      |               |                        |                 |                |          |         |      |



EPHEMERIDES

10 20.4

10 20.4

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$              | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$         | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------|------------------|---------|------|---------------|-------------------------------|-----------------|----------|-------------|---------|------|
| <b>57433</b>  | 2001 <i>SE</i> <sub>42</sub>  | 10 20.4 313°62  |          | 4°0/17.3 18      |         |      | <b>144643</b> | 2004 <i>FV</i> <sub>97</sub>  | 10 20.4 312°18  |          | 6°3/15.3 18 |         |      |
| 9 18          | 2 3.12                        | + 4 27.9        | 1.425    | 2.316            | 14.7    | 19.2 | 9 18          | 2 2.82                        | - 3 3.5         | 1.623    | 2.513       | 13.3    | 19.1 |
| 9 28          | 1 58.45                       | + 3 18.2        | 1.361    | 2.308            | 10.6    | 19.0 | 9 28          | 1 58.09                       | - 4 8.6         | 1.553    | 2.494       | 10.0    | 18.9 |
| 10 8          | 1 51.46                       | + 2 1.7         | 1.319    | 2.300            | 6.3     | 18.7 | 10 8          | 1 51.23                       | - 5 12.1        | 1.506    | 2.476       | 7.1     | 18.7 |
| 10 18         | 1 43.00                       | + 0 46.4        | 1.303    | 2.292            | 4.0     | 18.5 | 10 18         | 1 42.99                       | - 6 6.3         | 1.485    | 2.458       | 6.4     | 18.6 |
| 10 28         | 1 34.29                       | - 0 18.2        | 1.314    | 2.285            | 6.9     | 18.7 | 10 28         | 1 34.42                       | - 6 43.2        | 1.490    | 2.441       | 8.7     | 18.7 |
| 11 7          | 1 26.58                       | - 1 4.4         | 1.349    | 2.278            | 11.3    | 18.9 | 11 7          | 1 26.68                       | - 6 57.4        | 1.519    | 2.423       | 12.1    | 18.9 |
| 11 17         | 1 20.88                       | - 1 27.6        | 1.407    | 2.271            | 15.4    | 19.2 | 11 17         | 1 20.72                       | - 6 46.9        | 1.571    | 2.407       | 15.6    | 19.0 |
| 11 27         | 1 17.87                       | - 1 26.4        | 1.484    | 2.265            | 18.9    | 19.4 | 11 27         | 1 17.21                       | - 6 12.3        | 1.641    | 2.391       | 18.7    | 19.2 |
| <b>355424</b> | 2007 <i>VR</i> <sub>2</sub>   | 10 20.4         |          | 2°16 2°4/22.5 18 |         |      | <b>169591</b> | 2002 <i>GP</i> <sub>68</sub>  | 10 20.4 135°06  |          | 4°5/15.7 18 |         |      |
| 9 18          | 2 3.38                        | +19 24.5        | 1.756    | 2.602            | 14.6    | 20.7 | 9 18          | 2 3.08                        | + 1 12.1        | 1.988    | 2.868       | 11.7    | 20.7 |
| 9 28          | 1 58.37                       | +19 5.1         | 1.685    | 2.602            | 11.0    | 20.5 | 9 28          | 1 57.72                       | - 0 22.9        | 1.938    | 2.878       | 8.4     | 20.5 |
| 10 8          | 1 51.31                       | +18 28.2        | 1.636    | 2.602            | 7.1     | 20.3 | 10 8          | 1 50.74                       | - 1 59.5        | 1.914    | 2.887       | 5.5     | 20.4 |
| 10 18         | 1 42.97                       | +17 36.0        | 1.612    | 2.602            | 3.2     | 20.0 | 10 18         | 1 42.86                       | - 3 30.1        | 1.918    | 2.896       | 4.6     | 20.3 |
| 10 28         | 1 34.43                       | +16 33.5        | 1.617    | 2.602            | 3.5     | 20.1 | 10 28         | 1 34.94                       | - 4 47.4        | 1.951    | 2.905       | 6.7     | 20.5 |
| 11 7          | 1 26.78                       | +15 28.0        | 1.649    | 2.603            | 7.4     | 20.3 | 11 7          | 1 27.86                       | - 5 45.7        | 2.011    | 2.913       | 9.7     | 20.7 |
| 11 17         | 1 20.93                       | +14 26.8        | 1.706    | 2.603            | 11.3    | 20.5 | 11 17         | 1 22.31                       | - 6 22.3        | 2.096    | 2.920       | 12.7    | 20.9 |
| 11 27         | 1 17.49                       | +13 36.4        | 1.787    | 2.604            | 14.7    | 20.8 | 11 27         | 1 18.75                       | - 6 36.8        | 2.202    | 2.928       | 15.1    | 21.1 |
| <b>367993</b> | 2012 <i>FV</i> <sub>31</sub>  | 10 20.4 153°12  |          | 1°9/18.2 18      |         |      | <b>49077</b>  | 1998 <i>RT</i> <sub>59</sub>  | 10 20.4 92°83   |          | 0°7/20.9 18 |         |      |
| 9 18          | 2 1.89                        | + 4 56.5        | 2.718    | 3.584            | 9.4     | 21.7 | 9 18          | 2 5.89                        | +15 30.2        | 1.505    | 2.368       | 15.6    | 19.3 |
| 9 28          | 1 56.55                       | + 4 22.6        | 2.654    | 3.590            | 6.7     | 21.5 | 9 28          | 2 0.24                        | +14 47.2        | 1.449    | 2.380       | 11.5    | 19.1 |
| 10 8          | 1 49.98                       | + 3 46.0        | 2.617    | 3.595            | 3.8     | 21.3 | 10 8          | 1 52.36                       | +13 47.8        | 1.416    | 2.391       | 6.7     | 18.9 |
| 10 18         | 1 42.69                       | + 3 9.9         | 2.609    | 3.600            | 1.9     | 21.2 | 10 18         | 1 43.19                       | +12 36.7        | 1.408    | 2.403       | 1.7     | 18.6 |
| 10 28         | 1 35.33                       | + 2 38.1        | 2.631    | 3.604            | 3.7     | 21.3 | 10 28         | 1 33.96                       | +11 21.6        | 1.428    | 2.414       | 3.7     | 18.7 |
| 11 7          | 1 28.55                       | + 2 14.0        | 2.682    | 3.608            | 6.5     | 21.5 | 11 7          | 1 25.89                       | +10 11.2        | 1.475    | 2.425       | 8.5     | 19.1 |
| 11 17         | 1 22.89                       | + 1 59.7        | 2.761    | 3.612            | 9.1     | 21.7 | 11 17         | 1 19.92                       | + 9 12.8        | 1.546    | 2.436       | 12.7    | 19.3 |
| 11 27         | 1 18.78                       | + 1 56.9        | 2.863    | 3.616            | 11.4    | 21.9 | 11 27         | 1 16.61                       | + 8 31.5        | 1.640    | 2.447       | 16.3    | 19.6 |
| <b>353045</b> | 2009 <i>DT</i> <sub>9</sub>   | 10 20.4 207°57  |          | 4°1/15.9 18      |         |      | <b>127678</b> | 2003 <i>ES</i> <sub>8</sub>   | 10 20.4 174°92  |          | 3°7/23.1 17 |         |      |
| 9 18          | 2 2.75                        | + 0 0.1         | 2.296    | 3.171            | 10.5    | 21.5 | 9 18          | 2 9.14                        | +21 13.2        | 1.436    | 2.279       | 17.4    | 20.4 |
| 9 28          | 1 57.41                       | - 1 10.5        | 2.229    | 3.166            | 7.7     | 21.3 | 9 28          | 2 2.99                        | +21 9.5         | 1.367    | 2.281       | 13.4    | 20.1 |
| 10 8          | 1 50.57                       | - 2 22.1        | 2.188    | 3.160            | 5.1     | 21.1 | 10 8          | 1 54.14                       | +20 43.9        | 1.320    | 2.282       | 8.9     | 19.9 |
| 10 18         | 1 42.81                       | - 3 28.8        | 2.177    | 3.154            | 4.2     | 21.1 | 10 18         | 1 43.57                       | +19 57.0        | 1.296    | 2.283       | 4.7     | 19.7 |
| 10 28         | 1 34.92                       | - 4 24.9        | 2.194    | 3.148            | 6.1     | 21.2 | 10 28         | 1 32.71                       | +18 54.1        | 1.299    | 2.283       | 4.6     | 19.7 |
| 11 7          | 1 27.69                       | - 5 5.8         | 2.239    | 3.141            | 8.9     | 21.3 | 11 7          | 1 23.04                       | +17 43.9        | 1.329    | 2.283       | 8.8     | 19.9 |
| 11 17         | 1 21.76                       | - 5 28.9        | 2.310    | 3.133            | 11.7    | 21.5 | 11 17         | 1 15.74                       | +16 36.1        | 1.383    | 2.283       | 13.3    | 20.2 |
| 11 27         | 1 17.65                       | - 5 33.5        | 2.402    | 3.125            | 14.1    | 21.7 | 11 27         | 1 11.54                       | +15 39.4        | 1.459    | 2.282       | 17.1    | 20.4 |
| <b>133409</b> | 2003 <i>SN</i> <sub>175</sub> | 10 20.4 324°00  |          | 1°3/19.3 18      |         |      | <b>476998</b> | 2008 <i>YN</i> <sub>122</sub> | 10 20.4 238°14  |          | 6°9/27.0 16 |         |      |
| 9 18          | 2 0.57                        | + 9 11.7        | 1.885    | 2.761            | 12.4    | 19.8 | 9 18          | 2 5.66                        | +31 50.2        | 1.924    | 2.703       | 16.0    | 21.4 |
| 9 28          | 1 56.24                       | + 8 33.8        | 1.806    | 2.746            | 8.9     | 19.6 | 9 28          | 2 0.17                        | +32 2.0         | 1.841    | 2.699       | 13.3    | 21.3 |
| 10 8          | 1 50.08                       | + 7 47.2        | 1.751    | 2.732            | 5.0     | 19.3 | 10 8          | 1 52.43                       | +31 49.4        | 1.779    | 2.695       | 10.4    | 21.1 |
| 10 18         | 1 42.74                       | + 6 56.2        | 1.722    | 2.717            | 1.4     | 19.0 | 10 18         | 1 43.24                       | +31 10.4        | 1.740    | 2.691       | 7.9     | 20.9 |
| 10 28         | 1 35.13                       | + 6 6.6         | 1.722    | 2.704            | 4.0     | 19.2 | 10 28         | 1 33.73                       | +30 7.1         | 1.728    | 2.687       | 6.9     | 20.8 |
| 11 7          | 1 28.22                       | + 5 24.3        | 1.749    | 2.691            | 8.1     | 19.4 | 11 7          | 1 25.12                       | +28 45.5        | 1.742    | 2.682       | 8.3     | 20.9 |
| 11 17         | 1 22.81                       | + 4 54.1        | 1.801    | 2.678            | 11.9    | 19.6 | 11 17         | 1 18.41                       | +27 14.5        | 1.782    | 2.677       | 11.0    | 21.1 |
| 11 27         | 1 19.54                       | + 4 39.2        | 1.874    | 2.666            | 15.1    | 19.8 | 11 27         | 1 14.29                       | +25 43.9        | 1.847    | 2.673       | 14.0    | 21.3 |
| <b>195212</b> | 2002 <i>DX</i> <sub>8</sub>   | 10 20.4 151°12  |          | 2°1/18.7 18      |         |      | <b>294317</b> | 2007 <i>VF</i> <sub>51</sub>  | 10 20.4 24°11   |          | 1°1/21.2 18 |         |      |
| 9 18          | 2 8.71                        | + 5 3.7         | 2.106    | 2.969            | 11.8    | 20.4 | 9 18          | 2 5.08                        | +14 8.2         | 1.453    | 2.323       | 15.7    | 20.2 |
| 9 28          | 2 1.72                        | + 4 44.2        | 2.044    | 2.978            | 8.5     | 20.2 | 9 28          | 1 59.81                       | +14 6.6         | 1.396    | 2.330       | 11.6    | 20.0 |
| 10 8          | 1 53.01                       | + 4 21.6        | 2.009    | 2.986            | 4.8     | 20.0 | 10 8          | 1 52.21                       | +13 51.6        | 1.360    | 2.337       | 6.9     | 19.7 |
| 10 18         | 1 43.30                       | + 3 59.4        | 2.001    | 2.994            | 2.1     | 19.8 | 10 18         | 1 43.18                       | +13 25.7        | 1.350    | 2.344       | 2.0     | 19.4 |
| 10 28         | 1 33.51                       | + 3 41.8        | 2.024    | 3.001            | 4.3     | 20.0 | 10 28         | 1 34.00                       | +12 54.2        | 1.366    | 2.353       | 3.7     | 19.6 |
| 11 7          | 1 24.57                       | + 3 32.3        | 2.077    | 3.007            | 7.8     | 20.2 | 11 7          | 1 25.94                       | +12 23.4        | 1.408    | 2.362       | 8.5     | 19.9 |
| 11 17         | 1 17.25                       | + 3 33.4        | 2.155    | 3.013            | 11.1    | 20.5 | 11 17         | 1 20.00                       | +11 59.4        | 1.474    | 2.371       | 12.8    | 20.2 |
| 11 27         | 1 12.05                       | + 3 46.6        | 2.257    | 3.018            | 13.8    | 20.7 | 11 27         | 1 16.79                       | +11 46.9        | 1.561    | 2.381       | 16.4    | 20.4 |
| <b>249492</b> | 2009 <i>VW</i> <sub>26</sub>  | 10 20.4 267°24  |          | 2°3/23.0 18      |         |      | <b>84780</b>  | 2002 <i>XN</i> <sub>60</sub>  | 10 20.4 132°93  |          | 2°0/22.0 18 |         |      |
| 9 18          | 2 1.19                        | +20 39.1        | 2.360    | 3.190            | 11.9    | 20.5 | 9 18          | 2 6.15                        | +18 4.3         | 1.605    | 2.457       | 15.4    | 19.6 |
| 9 28          | 1 56.39                       | +20 16.2        | 2.278    | 3.185            | 9.1     | 20.3 | 9 28          | 2 0.48                        | +17 40.1        | 1.540    | 2.462       | 11.6    | 19.4 |
| 10 8          | 1 50.04                       | +19 38.8        | 2.220    | 3.180            | 5.9     | 20.1 | 10 8          | 1 52.55                       | +16 58.2        | 1.496    | 2.466       | 7.2     | 19.2 |
| 10 18         | 1 42.72                       | +18 48.5        | 2.189    | 3.176            | 3.0     | 19.9 | 10 18         | 1 43.25                       | +16 1.4         | 1.478    | 2.470       | 2.8     | 18.9 |
| 10 28         | 1 35.24                       | +17 49.1        | 2.187    | 3.171            | 3.0     | 19.9 | 10 28         | 1 33.78                       | +14 55.5        | 1.487    | 2.474       | 3.6     | 19.0 |
| 11 7          | 1 28.38                       | +16 45.9        | 2.214    | 3.166            | 6.0     | 20.1 | 11 7          | 1 25.36                       | +13 48.6        | 1.524    | 2.477       | 8.0     | 19.2 |
| 11 17         | 1 22.85                       | +15 44.7        | 2.269    | 3.161            | 9.1     | 20.3 | 11 17         | 1 18.95                       | +12 48.5        | 1.586    | 2.481       | 12.2    | 19.5 |
| 11 27         | 1 19.17                       | +14 50.6        | 2.348    | 3.156            | 11.9    | 20.5 | 11 27         | 1 15.19                       | +12 1.6         | 1.671    | 2.484       | 15.8    | 19.8 |
| <b>450640</b> | 2006 <i>UG</i> <sub>19</sub>  | 10 20.4 52°75   |          | 1°7/21.9 18      |         |      | <b>156615</b> | 2002 <i>GL</i> <sub>130</sub> | 10 20.4 239°90  |          | 0°9/21.3 18 |         |      |
| 9 18          | 2 3.52                        | +17 21.0        | 1.749    | 2.603            | 14.3    | 21.5 | 9 18          | 2 2.99                        | +15 0.1         | 2.318    | 3.166       | 11.4    | 21.0 |
| 9 28          | 1 58.35                       | +16 58.1        | 1.689    | 2.612            | 10.6    | 21.3 | 9 28          | 1 57.69                       | +14 43.0        | 2.237    | 3.159       | 8.4     | 20.8 |
| 10 8          | 1 51.23                       | +16 19.9        | 1.651    | 2.622            | 6.5     | 21.1 | 10 8          | 1 50.80                       | +14 15.5        | 2.181    | 3.153       | 5.0     | 20.6 |
| 10 18         | 1 42.95                       | +15 29.3        | 1.640    | 2.632            | 2.5     | 20.8 | 10 18         | 1 42.91                       | +13 39.6        | 2.152    | 3.146       | 1.5     | 20.4 |
| 10 28         | 1 34.59                       | +14 31.7        | 1.656    | 2.642            | 3.3     | 20.9 | 10 28         | 1 34.81                       | +12 59.0        | 2.153    | 3.139       | 2.7     | 20.4 |
| 11 7          | 1 27.18                       | +13 33.9        | 1.699    | 2.653            | 7.3     | 21.2 | 11 7          | 1 27.34                       | +12 18.4        | 2.183    | 3.132       | 6.3     | 20.7 |
| 11 17         | 1 21.56                       | +12 42.6        | 1.769    | 2.663            | 11.2    | 21.5 | 11 17         | 1 21.21                       | +11 42.4        | 2.241    | 3.125       | 9.6     | 20.9 |
| 11 27         | 1 18.28                       | +12 2.9         | 1.861    | 2.674            | 14.4    | 21.7 | 11 27         | 1 16.95                       | +11 14.9        | 2.322    | 3.117       | 12.5    | 21.0 |
| <b>241009</b> | 2006 <i>MJ</i> <sub>12</sub>  | 10 20.4 73°57   |          | 1°4/19.0 18      |         |      | <b>447988</b> | 2008 <i>CU</i> <              |                 |          |             |         |      |

EPHEMERIDES

10 20.4

10 20.4

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$  | $\Delta$ | $r$   | $\beta$ | $V$  | 2020  | $\alpha_{2000}$ | $\delta_{2000}$               | $\Delta$   | $r$   | $\beta$ | $V$  |  |
|---------------|-------------------------------|--|----------|-------|---------|------|-------|-----------------|-------------------------------|--|-------|---------|------|--|
| <b>455605</b> | 2004 <i>TZ</i> <sub>101</sub> | 10 20.4 301 <sup>o</sup> .74 0 <sup>o</sup> .8/21.3 18 |          |       |         |      |       | <b>480151</b>   | 2015 <i>FQ</i> <sub>266</sub> | 10 20.4 214 <sup>o</sup> .97 0 <sup>o</sup> .4/20.1 16 |       |         |      |  |
| 9 18          | 2 0.34                        | +16 16.7   | 2.093    | 2.946 | 12.3    | 21.0 | 9 18  | 2 8.57          | +11 2.2                       | 1.743  | 2.606 | 13.9    | 22.2 |  |
| 9 28          | 1 55.94                       | +15 30.9   | 2.011    | 2.936 | 9.1     | 20.8 | 9 28  | 2 2.17          | +10 39.8                      | 1.668  | 2.600 | 10.1    | 21.9 |  |
| 10 8          | 1 49.86                       | +14 31.0   | 1.952    | 2.925 | 5.4     | 20.5 | 10 8  | 1 53.56         | +10 7.2                       | 1.615  | 2.593 | 5.8     | 21.7 |  |
| 10 18         | 1 42.73                       | +13 20.2   | 1.921    | 2.915 | 1.6     | 20.2 | 10 18 | 1 43.51         | +9 27.8                       | 1.590  | 2.586 | 1.1     | 21.3 |  |
| 10 28         | 1 35.39                       | +12 4.1  | 1.919    | 2.905 | 2.9     | 20.3 | 10 28 | 1 33.17         | +8 47.0                       | 1.593  | 2.578 | 3.8     | 21.5 |  |
| 11 7          | 1 28.71                       | +10 49.4   | 1.945    | 2.895 | 6.8     | 20.6 | 11 7  | 1 23.72         | +8 10.7                       | 1.625  | 2.569 | 8.4     | 21.8 |  |
| 11 17         | 1 23.45                       | +9 42.5  | 1.999    | 2.886 | 10.4    | 20.8 | 11 17 | 1 16.14         | +7 44.3                       | 1.682  | 2.560 | 12.6    | 22.0 |  |
| 11 27         | 1 20.17                       | +8 48.4  | 2.075    | 2.876 | 13.6    | 21.0 | 11 27 | 1 11.11         | +7 31.6                       | 1.761  | 2.550 | 16.1    | 22.2 |  |
| <b>358354</b> | 2006 <i>WX</i> <sub>109</sub> | 10 20.4 314 <sup>o</sup> .26 1 <sup>o</sup> .8/18.9 18 |          |       |         |      |       | <b>389420</b>   | 2010 <i>BU</i> <sub>88</sub>  | 10 20.4 198 <sup>o</sup> .74 5 <sup>o</sup> .7/14.6 18 |       |         |      |  |
| 9 18          | 2 2.80                        | +7 36.2  | 1.916    | 2.790 | 12.3    | 21.2 | 9 18  | 2 3.83          | -4 6.7                        | 2.075  | 2.952 | 11.4    | 21.4 |  |
| 9 28          | 1 57.73                       | +6 57.3  | 1.848    | 2.787 | 8.8     | 21.0 | 9 28  | 1 58.32         | -5 25.4                       | 2.016  | 2.950 | 8.6     | 21.3 |  |
| 10 8          | 1 50.88                       | +6 11.8  | 1.804    | 2.784 | 5.0     | 20.7 | 10 8  | 1 51.17         | -6 41.4                       | 1.984  | 2.947 | 6.3     | 21.1 |  |
| 10 18         | 1 42.93                       | +5 24.1  | 1.787    | 2.781 | 1.8     | 20.5 | 10 18 | 1 43.02         | -7 47.9                       | 1.979  | 2.944 | 5.9     | 21.1 |  |
| 10 28         | 1 34.80                       | +4 39.9  | 1.798    | 2.778 | 4.3     | 20.7 | 10 28 | 1 34.76         | -8 38.5                       | 2.001  | 2.940 | 7.7     | 21.2 |  |
| 11 7          | 1 27.45                       | +4 4.5   | 1.838    | 2.775 | 8.2     | 20.9 | 11 7  | 1 27.25         | -9 9.0                        | 2.051  | 2.936 | 10.5    | 21.4 |  |
| 11 17         | 1 21.66                       | +3 42.0  | 1.902    | 2.772 | 11.8    | 21.1 | 11 17 | 1 21.21         | -9 17.7                       | 2.124  | 2.931 | 13.2    | 21.5 |  |
| 11 27         | 1 18.00                       | +3 34.7  | 1.989    | 2.769 | 14.8    | 21.3 | 11 27 | 1 17.17         | -9 5.2                        | 2.218  | 2.926 | 15.5    | 21.7 |  |
| <b>266269</b> | 2007 <i>AM</i> <sub>14</sub>  | 10 20.4 251 <sup>o</sup> .18 0 <sup>o</sup> .9/19.7 18 |          |       |         |      |       | <b>242024</b>   | 2002 <i>QB</i> <sub>50</sub>  | 10 20.4 39 <sup>o</sup> .82 1 <sup>o</sup> .8/19.0 18  |       |         |      |  |
| 9 18          | 2 5.72                        | +10 46.2   | 1.666    | 2.536 | 14.0    | 21.2 | 9 18  | 2 4.18          | +7 55.0                       | 1.636  | 2.514 | 13.8    | 20.5 |  |
| 9 28          | 2 0.21                        | +10 6.6  | 1.588    | 2.525 | 10.2    | 21.0 | 9 28  | 1 58.91         | +7 18.8                       | 1.579  | 2.520 | 9.9     | 20.2 |  |
| 10 8          | 1 52.46                       | +9 15.6  | 1.534    | 2.513 | 5.8     | 20.7 | 10 8  | 1 51.61         | +6 35.2                       | 1.545  | 2.526 | 5.5     | 20.0 |  |
| 10 18         | 1 43.27                       | +8 17.5  | 1.506    | 2.502 | 1.2     | 20.4 | 10 18 | 1 43.11         | +5 49.3                       | 1.537  | 2.532 | 1.8     | 19.8 |  |
| 10 28         | 1 33.76                       | +7 19.0  | 1.506    | 2.489 | 4.2     | 20.5 | 10 28 | 1 34.51         | +5 7.4                        | 1.557  | 2.538 | 4.6     | 20.0 |  |
| 11 7          | 1 25.10                       | +6 27.4  | 1.533    | 2.477 | 8.9     | 20.8 | 11 7  | 1 26.90         | +4 35.4                       | 1.604  | 2.545 | 8.9     | 20.3 |  |
| 11 17         | 1 18.29                       | +5 48.7  | 1.586    | 2.464 | 13.2    | 21.0 | 11 17 | 1 21.12         | +4 17.3                       | 1.675  | 2.551 | 12.7    | 20.5 |  |
| 11 27         | 1 14.04                       | +5 26.9  | 1.659    | 2.451 | 16.8    | 21.2 | 11 27 | 1 17.75         | +4 15.5                       | 1.768  | 2.558 | 16.0    | 20.7 |  |
| <b>117855</b> | 2005 <i>JO</i> <sub>167</sub> | 10 20.4 155 <sup>o</sup> .17 2 <sup>o</sup> .0/22.6 18 |          |       |         |      |       | <b>192226</b>   | 2008 <i>AB</i> <sub>112</sub> | 10 20.4 128 <sup>o</sup> .42 0 <sup>o</sup> .8/21.1 18 |       |         |      |  |
| 9 18          | 2 3.20                        | +20 22.8   | 2.214    | 3.044 | 12.5    | 20.2 | 9 18  | 2 4.18          | +14 29.4                      | 2.074  | 2.926 | 12.4    | 20.8 |  |
| 9 28          | 1 57.84                       | +19 40.4   | 2.141    | 3.050 | 9.5     | 20.0 | 9 28  | 1 58.64         | +14 10.1                      | 2.005  | 2.931 | 9.1     | 20.6 |  |
| 10 8          | 1 50.86                       | +18 42.1   | 2.092    | 3.055 | 6.0     | 19.8 | 10 8  | 1 51.37         | +13 39.8                      | 1.961  | 2.935 | 5.4     | 20.3 |  |
| 10 18         | 1 42.93                       | +17 30.5   | 2.070    | 3.059 | 2.7     | 19.6 | 10 18 | 1 43.07         | +13 1.2                       | 1.945  | 2.939 | 1.5     | 20.1 |  |
| 10 28         | 1 34.90                       | +16 10.7   | 2.078    | 3.063 | 2.9     | 19.6 | 10 28 | 1 34.64         | +12 18.5                      | 1.957  | 2.943 | 2.9     | 20.2 |  |
| 11 7          | 1 27.64                       | +14 49.4   | 2.116    | 3.067 | 6.2     | 19.8 | 11 7  | 1 26.98         | +11 36.9                      | 1.998  | 2.947 | 6.7     | 20.5 |  |
| 11 17         | 1 21.85                       | +13 33.0   | 2.182    | 3.071 | 9.6     | 20.1 | 11 17 | 1 20.86         | +11 1.3                       | 2.066  | 2.951 | 10.3    | 20.7 |  |
| 11 27         | 1 18.02                       | +12 27.2   | 2.272    | 3.074 | 12.5    | 20.3 | 11 27 | 1 16.80         | +10 35.8                      | 2.157  | 2.954 | 13.2    | 20.9 |  |
| <b>44770</b>  | 1999 <i>TA</i> <sub>131</sub> | 10 20.4 145 <sup>o</sup> .98 0 <sup>o</sup> .5/20.0 18 |          |       |         |      |       | <b>148182</b>   | 2000 <i>AF</i> <sub>161</sub> | 10 20.4 299 <sup>o</sup> .98 2 <sup>o</sup> .8/22.1 18 |       |         |      |  |
| 9 18          | 2 7.29                        | +12 32.1   | 1.791    | 2.651 | 13.7    | 19.9 | 9 18  | 2 7.36          | +17 1.0                       | 1.391  | 2.252 | 16.8    | 19.3 |  |
| 9 28          | 2 0.97                        | +11 39.6   | 1.731    | 2.662 | 9.9     | 19.7 | 9 28  | 2 2.07          | +17 16.6                      | 1.306  | 2.232 | 12.8    | 19.0 |  |
| 10 8          | 1 52.70                       | +10 35.1   | 1.695    | 2.672 | 5.6     | 19.4 | 10 8  | 1 53.91         | +17 16.1                      | 1.241  | 2.212 | 8.2     | 18.7 |  |
| 10 18         | 1 43.30                       | +9 23.5  | 1.686    | 2.682 | 1.1     | 19.1 | 10 18 | 1 43.66         | +16 59.4                      | 1.201  | 2.192 | 3.6     | 18.3 |  |
| 10 28         | 1 33.84                       | +8 11.8  | 1.707    | 2.690 | 3.7     | 19.4 | 10 28 | 1 32.72         | +16 29.7                      | 1.186  | 2.172 | 4.4     | 18.3 |  |
| 11 7          | 1 25.39                       | +7 7.0   | 1.756    | 2.698 | 8.1     | 19.6 | 11 7  | 1 22.66         | +15 53.8                      | 1.197  | 2.152 | 9.4     | 18.6 |  |
| 11 17         | 1 18.77                       | +6 15.1  | 1.831    | 2.705 | 11.9    | 19.9 | 11 17 | 1 14.86         | +15 19.6                      | 1.231  | 2.133 | 14.4    | 18.8 |  |
| 11 27         | 1 14.52                       | +5 39.8  | 1.928    | 2.712 | 15.1    | 20.1 | 11 27 | 1 10.29         | +14 54.9                      | 1.286  | 2.114 | 18.7    | 19.0 |  |
| <b>434317</b> | 2004 <i>GP</i> <sub>49</sub>  | 10 20.4 290 <sup>o</sup> .65 0 <sup>o</sup> .5/20.9 18 |          |       |         |      |       | <b>214641</b>   | 2006 <i>SY</i> <sub>52</sub>  | 10 20.4 239 <sup>o</sup> .77 2 <sup>o</sup> .1/18.6 18 |       |         |      |  |
| 9 18          | 2 3.67                        | +15 25.0   | 1.467    | 2.335 | 15.7    | 21.2 | 9 18  | 2 4.09          | +6 20.1                       | 1.915  | 2.790 | 12.3    | 20.3 |  |
| 9 28          | 1 58.94                       | +14 37.3   | 1.394    | 2.327 | 11.6    | 21.0 | 9 28  | 1 58.67         | +5 43.9                       | 1.849  | 2.788 | 8.8     | 20.1 |  |
| 10 8          | 1 51.83                       | +13 31.2   | 1.342    | 2.319 | 6.8     | 20.7 | 10 8  | 1 51.44         | +5 2.4                        | 1.807  | 2.787 | 5.0     | 19.8 |  |
| 10 18         | 1 43.16                       | +12 11.2   | 1.316    | 2.311 | 1.6     | 20.3 | 10 18 | 1 43.10         | +4 20.1                       | 1.793  | 2.786 | 2.1     | 19.6 |  |
| 10 28         | 1 34.19                       | +10 45.4   | 1.317    | 2.303 | 3.9     | 20.5 | 10 28 | 1 34.61         | +3 42.4                       | 1.807  | 2.784 | 4.5     | 19.8 |  |
| 11 7          | 1 26.22                       | +9 23.6  | 1.344    | 2.295 | 9.0     | 20.8 | 11 7  | 1 26.92         | +3 14.4                       | 1.849  | 2.783 | 8.3     | 20.0 |  |
| 11 17         | 1 20.29                       | +8 14.7  | 1.395    | 2.288 | 13.7    | 21.0 | 11 17 | 1 20.82         | +2 59.4                       | 1.916  | 2.782 | 11.9    | 20.3 |  |
| 11 27         | 1 17.12                       | +7 24.9  | 1.467    | 2.280 | 17.6    | 21.2 | 11 27 | 1 16.87         | +2 59.6                       | 2.005  | 2.780 | 14.8    | 20.5 |  |
| <b>84684</b>  | 2002 <i>VO</i> <sub>100</sub> | 10 20.4 338 <sup>o</sup> .28 2 <sup>o</sup> .2/21.7 18 |          |       |         |      |       | <b>255273</b>   | 2005 <i>VV</i> <sub>52</sub>  | 10 20.4 357 <sup>o</sup> .66 5 <sup>o</sup> .4/16.2 18 |       |         |      |  |
| 9 18          | 2 5.92                        | +15 3.3  | 1.465    | 2.331 | 15.8    | 18.4 | 9 18  | 2 4.05          | -3 6.2                        | 1.792  | 2.676 | 12.5    | 19.6 |  |
| 9 28          | 2 0.73                        | +15 31.6   | 1.389    | 2.319 | 11.9    | 18.2 | 9 28  | 1 58.69         | -3 46.6                       | 1.736  | 2.674 | 9.3     | 19.5 |  |
| 10 8          | 1 52.95                       | +15 47.4   | 1.335    | 2.308 | 7.4     | 17.9 | 10 8  | 1 51.45         | -4 23.6                       | 1.703  | 2.673 | 6.4     | 19.3 |  |
| 10 18         | 1 43.41                       | +15 51.2   | 1.305    | 2.298 | 3.0     | 17.6 | 10 18 | 1 43.10         | -4 51.2                       | 1.697  | 2.673 | 5.4     | 19.2 |  |
| 10 28         | 1 33.39                       | +15 45.6   | 1.302    | 2.288 | 4.0     | 17.6 | 10 28 | 1 34.64         | -5 4.0                        | 1.718  | 2.672 | 7.4     | 19.3 |  |
| 11 7          | 1 24.29                       | +15 35.5   | 1.325    | 2.280 | 8.7     | 17.9 | 11 7  | 1 27.05         | -4 58.8                       | 1.764  | 2.672 | 10.5    | 19.5 |  |
| 11 17         | 1 17.31                       | +15 26.8   | 1.371    | 2.272 | 13.3    | 18.1 | 11 17 | 1 21.15         | -4 34.6                       | 1.835  | 2.673 | 13.6    | 19.7 |  |
| 11 27         | 1 13.28                       | +15 25.1   | 1.439    | 2.266 | 17.2    | 18.4 | 11 27 | 1 17.48         | -3 52.5                       | 1.925  | 2.674 | 16.3    | 19.9 |  |
| <b>300581</b> | 2007 <i>TD</i> <sub>372</sub> | 10 20.4 184 <sup>o</sup> .03 2 <sup>o</sup> .4/17.7 18 |          |       |         |      |       | <b>236986</b>   | 2008 <i>QU</i> <sub>9</sub>   | 10 20.4 54 <sup>o</sup> .24 7 <sup>o</sup> .2/27.2 17  |       |         |      |  |
| 9 18          | 2 2.97                        | +6 26.9  | 2.314    | 3.182 | 10.7    | 21.7 | 9 18  | 2 8.82          | +32 18.7                      | 2.201  | 2.963 | 14.7    | 20.3 |  |
| 9 28          | 1 57.56                       | +5 11.3  | 2.246    | 3.183 | 7.6     | 21.5 | 9 28  | 2 2.25          | +33 15.0                      | 2.133  | 2.975 | 12.4    | 20.2 |  |
| 10 8          | 1 50.67                       | +3 49.6  | 2.204    | 3.183 | 4.4     | 21.3 | 10 8  | 1 53.57         | +33 51.1                      | 2.086  | 2.987 | 10.0    | 20.0 |  |
| 10 18         | 1 42.91                       | +2 27.3  | 2.192    | 3.182 | 2.4     | 21.2 | 10 18 | 1 43.54         | +34 4.2                       | 2.064  | 2.999 | 8.0     | 19.9 |  |
| 10 28         | 1 35.04                       | +1 10.7  | 2.209    | 3.180 | 4.6     | 21.3 | 10 28 | 1 33.24         | +33 54.6                      | 2.069  | 3.011 | 7.2     | 19.9 |  |
| 11 7          | 1 27.85                       | +0 5.3   | 2.257    | 3.178 | 7.8     | 21.5 | 11 7  | 1 23.77         | +33 25.9                      | 2.100  | 3.023 | 8.2     | 20.0 |  |
| 11 17         | 1 21.97                       | -0 44.8  | 2.330    | 3.176 | 10.8    | 21.7 | 11 17 | 1 16.09         | +32 44.2                      | 2.158  | 3.036 | 10.2    | 20.1 |  |
| 11 27         | 1 17.90                       | -1 17.3  | 2.427    | 3.173 | 13.4    | 21.9 | 11 27 | 1 10.85         | +31 57.0                      | 2.239  | 3.048 | 12.4    | 20.3 |  |
| <b>323813</b> | 2005 <i>RF</i> <sub>31</sub>  | 10 20.4 58 <sup>o</sup> .70 5 <sup>o</sup> .8/16.1 16  |          |       |         |      |       | <b>355543</b>   | 2008 <i>BP</i> <sub>13</sub>  | 10 20.4 321 <sup>o</sup> .61 3 <sup>o</sup> .3/17.7 18 |       |         |      |  |
| 9 18          | 2 5.93                        | +1 40.6  | 1.237    | 2.133 | 16.     |      |       |                 |                               |  |       |         |      |  |

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10 20.4

10 20.5

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$            | $\Delta$ | $r$   | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$            | $\Delta$ | $r$   | $\beta$ | $V$  |
|---------------|-------------------------------|----------------------------|----------|-------|---------|------|---------------|-------------------------------|----------------------------|----------|-------|---------|------|
| <b>69432</b>  | 1996 <i>HC</i> <sub>18</sub>  | 10 20.4 190°01 0°3/20.1 18 |          |       |         |      | <b>247698</b> | 2003 <i>BZ</i> <sub>51</sub>  | 10 20.4 262°67 2°4/18.4 18 |          |       |         |      |
| 9 18          | 2 1.92                        | +11 12.8                   | 2.638    | 3.493 | 10.0    | 20.1 | 9 18          | 2 4.80                        | +7 37.9                    | 1.710    | 2.586 | 13.4    | 21.0 |
| 9 28          | 1 56.72                       | +10 42.0                   | 2.563    | 3.492 | 7.2     | 19.9 | 9 28          | 1 59.54                       | +6 38.0                    | 1.629    | 2.569 | 9.7     | 20.7 |
| 10 8          | 1 50.19                       | +10 4.1                    | 2.514    | 3.491 | 4.1     | 19.7 | 10 8          | 1 52.13                       | +5 28.4                    | 1.571    | 2.551 | 5.5     | 20.5 |
| 10 18         | 1 42.86                       | +9 21.8                    | 2.494    | 3.490 | 0.8     | 19.4 | 10 18         | 1 43.30                       | +4 14.9                    | 1.540    | 2.533 | 2.4     | 20.2 |
| 10 28         | 1 35.40                       | +8 38.9                    | 2.504    | 3.488 | 2.7     | 19.6 | 10 28         | 1 34.10                       | +3 5.3                     | 1.538    | 2.515 | 5.2     | 20.4 |
| 11 7          | 1 28.51                       | +7 59.5                    | 2.544    | 3.486 | 5.9     | 19.8 | 11 7          | 1 25.68                       | +2 7.2                     | 1.562    | 2.496 | 9.6     | 20.6 |
| 11 17         | 1 22.77                       | +7 27.3                    | 2.611    | 3.483 | 8.9     | 20.0 | 11 17         | 1 19.01                       | +1 26.3                    | 1.611    | 2.477 | 13.7    | 20.8 |
| 11 27         | 1 18.65                       | +7 4.9                     | 2.703    | 3.480 | 11.4    | 20.2 | 11 27         | 1 14.80                       | +1 6.0                     | 1.681    | 2.457 | 17.2    | 21.0 |
| <b>510239</b> | 2011 <i>FJ</i> <sub>31</sub>  | 10 20.4 265°21 1°0/19.7 18 |          |       |         |      | <b>209268</b> | 2003 <i>XK</i> <sub>8</sub>   | 10 20.4 4°66 7°1/24.7 18   |          |       |         |      |
| 9 18          | 2 5.56                        | +10 31.1                   | 1.621    | 2.493 | 14.3    | 21.8 | 9 18          | 2 9.20                        | +25 17.8                   | 1.461    | 2.288 | 18.0    | 19.4 |
| 9 28          | 2 0.18                        | +9 52.4                    | 1.542    | 2.480 | 10.4    | 21.6 | 9 28          | 2 3.30                        | +26 27.0                   | 1.393    | 2.287 | 14.6    | 19.1 |
| 10 8          | 1 52.53                       | +9 2.1                     | 1.486    | 2.466 | 5.9     | 21.3 | 10 8          | 1 54.53                       | +27 15.4                   | 1.346    | 2.288 | 10.9    | 18.9 |
| 10 18         | 1 43.36                       | +8 4.8                     | 1.457    | 2.452 | 1.3     | 20.9 | 10 18         | 1 43.81                       | +27 39.1                   | 1.321    | 2.289 | 7.8     | 18.8 |
| 10 28         | 1 33.83                       | +7 7.2                     | 1.455    | 2.438 | 4.3     | 21.1 | 10 28         | 1 32.58                       | +27 38.1                   | 1.322    | 2.291 | 7.3     | 18.7 |
| 11 7          | 1 25.16                       | +6 16.7                    | 1.480    | 2.424 | 9.1     | 21.4 | 11 7          | 1 22.45                       | +27 17.0                   | 1.348    | 2.293 | 9.7     | 18.9 |
| 11 17         | 1 18.37                       | +5 39.6                    | 1.530    | 2.410 | 13.5    | 21.6 | 11 17         | 1 14.74                       | +26 43.9                   | 1.398    | 2.297 | 13.2    | 19.1 |
| 11 27         | 1 14.19                       | +5 19.9                    | 1.600    | 2.395 | 17.2    | 21.8 | 11 27         | 1 10.28                       | +26 8.5                    | 1.469    | 2.301 | 16.6    | 19.3 |
| <b>274922</b> | 2009 <i>SH</i> <sub>158</sub> | 10 20.4 108°33 2°4/22.3 16 |          |       |         |      | <b>27118</b>  | 1998 <i>WD</i> <sub>8</sub>   | 10 20.4 283°84 2°5/18.4 18 |          |       |         |      |
| 9 18          | 2 10.09                       | +18 14.3                   | 1.683    | 2.525 | 15.3    | 21.5 | 9 18          | 2 4.80                        | +5 1.5                     | 1.858    | 2.735 | 12.5    | 18.2 |
| 9 28          | 2 3.15                        | +18 12.0                   | 1.627    | 2.543 | 11.5    | 21.3 | 9 28          | 1 59.25                       | +4 29.2                    | 1.792    | 2.732 | 9.0     | 18.0 |
| 10 8          | 1 54.02                       | +17 53.7                   | 1.594    | 2.560 | 7.2     | 21.1 | 10 8          | 1 51.81                       | +3 52.7                    | 1.750    | 2.730 | 5.2     | 17.7 |
| 10 18         | 1 43.62                       | +17 21.1                   | 1.587    | 2.577 | 3.2     | 20.9 | 10 18         | 1 43.23                       | +3 16.7                    | 1.735    | 2.727 | 2.5     | 17.6 |
| 10 28         | 1 33.18                       | +16 38.8                   | 1.608    | 2.593 | 3.6     | 20.9 | 10 28         | 1 34.46                       | +2 46.6                    | 1.749    | 2.725 | 4.9     | 17.7 |
| 11 7          | 1 23.89                       | +15 53.1                   | 1.657    | 2.609 | 7.6     | 21.2 | 11 7          | 1 26.52                       | +2 27.0                    | 1.789    | 2.722 | 8.7     | 17.9 |
| 11 17         | 1 16.69                       | +15 11.0                   | 1.733    | 2.624 | 11.5    | 21.5 | 11 17         | 1 20.23                       | +2 21.1                    | 1.855    | 2.720 | 12.3    | 18.2 |
| 11 27         | 1 12.13                       | +14 38.0                   | 1.831    | 2.639 | 14.8    | 21.7 | 11 27         | 1 16.16                       | +2 30.5                    | 1.943    | 2.717 | 15.3    | 18.4 |
| <b>60073</b>  | 1999 <i>TQ</i> <sub>135</sub> | 10 20.4 298°08 0°8/21.2 18 |          |       |         |      | <b>212213</b> | 2005 <i>GZ</i> <sub>172</sub> | 10 20.4 276°79 1°4/19.2 18 |          |       |         |      |
| 9 18          | 2 2.40                        | +14 39.7                   | 2.087    | 2.942 | 12.2    | 19.6 | 9 18          | 2 3.11                        | +9 29.2                    | 1.816    | 2.689 | 12.9    | 21.1 |
| 9 28          | 1 57.44                       | +14 18.2                   | 2.009    | 2.935 | 9.0     | 19.4 | 9 28          | 1 58.13                       | +8 42.0                    | 1.743    | 2.681 | 9.3     | 20.9 |
| 10 8          | 1 50.76                       | +13 45.2                   | 1.954    | 2.928 | 5.4     | 19.1 | 10 8          | 1 51.23                       | +7 45.4                    | 1.694    | 2.674 | 5.2     | 20.6 |
| 10 18         | 1 42.99                       | +13 3.5                    | 1.927    | 2.922 | 1.5     | 18.9 | 10 18         | 1 43.12                       | +6 44.2                    | 1.671    | 2.666 | 1.5     | 20.3 |
| 10 28         | 1 35.00                       | +12 17.2                   | 1.929    | 2.915 | 2.9     | 18.9 | 10 28         | 1 34.78                       | +5 44.7                    | 1.677    | 2.658 | 4.2     | 20.5 |
| 11 7          | 1 27.70                       | +11 31.7                   | 1.959    | 2.909 | 6.8     | 19.2 | 11 7          | 1 27.23                       | +4 53.6                    | 1.710    | 2.651 | 8.4     | 20.8 |
| 11 17         | 1 21.85                       | +10 52.3                   | 2.015    | 2.902 | 10.4    | 19.4 | 11 17         | 1 21.32                       | +4 16.0                    | 1.769    | 2.643 | 12.3    | 21.0 |
| 11 27         | 1 18.03                       | +10 23.2                   | 2.095    | 2.896 | 13.4    | 19.6 | 11 27         | 1 17.66                       | +3 55.3                    | 1.850    | 2.636 | 15.5    | 21.2 |
| <b>401949</b> | 2002 <i>QT</i> <sub>70</sub>  | 10 20.4 5°96 0°9/21.3 17   |          |       |         |      | <b>110160</b> | 2001 <i>SG</i> <sub>161</sub> | 10 20.4 2°70 0°1/20.5 18   |          |       |         |      |
| 9 18          | 2 1.39                        | +14 42.3                   | 1.864    | 2.726 | 13.2    | 20.9 | 9 18          | 2 1.58                        | +12 55.0                   | 1.101    | 1.995 | 17.9    | 18.9 |
| 9 28          | 1 56.82                       | +14 26.9                   | 1.797    | 2.727 | 9.7     | 20.7 | 9 28          | 1 57.90                       | +12 30.4                   | 1.046    | 1.993 | 13.1    | 18.7 |
| 10 8          | 1 50.43                       | +13 59.5                   | 1.754    | 2.728 | 5.8     | 20.5 | 10 8          | 1 51.42                       | +11 49.2                   | 1.011    | 1.992 | 7.6     | 18.4 |
| 10 18         | 1 42.93                       | +13 22.8                   | 1.736    | 2.730 | 1.7     | 20.2 | 10 18         | 1 43.17                       | +10 56.5                   | 0.997    | 1.993 | 1.5     | 18.0 |
| 10 28         | 1 35.25                       | +12 41.5                   | 1.746    | 2.733 | 3.1     | 20.3 | 10 28         | 1 34.67                       | +10 0.7                    | 1.008    | 1.995 | 4.5     | 18.2 |
| 11 7          | 1 28.37                       | +12 1.1                    | 1.784    | 2.736 | 7.1     | 20.6 | 11 7          | 1 27.45                       | +9 11.6                    | 1.042    | 1.998 | 10.3    | 18.6 |
| 11 17         | 1 23.09                       | +11 27.0                   | 1.847    | 2.740 | 10.8    | 20.8 | 11 17         | 1 22.70                       | +8 37.0                    | 1.097    | 2.003 | 15.4    | 18.9 |
| 11 27         | 1 19.97                       | +11 3.5                    | 1.933    | 2.744 | 14.0    | 21.0 | 11 27         | 1 21.12                       | +8 21.8                    | 1.172    | 2.009 | 19.6    | 19.1 |
| <b>77482</b>  | 2001 <i>HF</i> <sub>30</sub>  | 10 20.4 203°64 1°0/19.6 18 |          |       |         |      | <b>72578</b>  | 2001 <i>EW</i> <sub>18</sub>  | 10 20.4 270°26 0°3/20.2 18 |          |       |         |      |
| 9 18          | 2 7.73                        | +9 49.4                    | 1.846    | 2.709 | 13.2    | 20.5 | 9 18          | 2 3.63                        | +12 35.7                   | 1.812    | 2.677 | 13.3    | 19.6 |
| 9 28          | 2 1.43                        | +9 15.8                    | 1.772    | 2.705 | 9.5     | 20.2 | 9 28          | 1 58.61                       | +11 53.3                   | 1.730    | 2.663 | 9.7     | 19.4 |
| 10 8          | 1 53.09                       | +8 33.2                    | 1.722    | 2.701 | 5.4     | 20.0 | 10 8          | 1 51.56                       | +10 58.2                   | 1.671    | 2.649 | 5.6     | 19.1 |
| 10 18         | 1 43.46                       | +7 45.5                    | 1.700    | 2.695 | 1.3     | 19.7 | 10 18         | 1 43.20                       | +9 54.4                    | 1.640    | 2.635 | 1.1     | 18.7 |
| 10 28         | 1 33.60                       | +6 58.4                    | 1.707    | 2.689 | 4.0     | 19.9 | 10 28         | 1 34.52                       | +8 48.2                    | 1.636    | 2.621 | 3.7     | 18.9 |
| 11 7          | 1 24.59                       | +6 17.9                    | 1.742    | 2.683 | 8.3     | 20.1 | 11 7          | 1 26.60                       | +7 46.6                    | 1.661    | 2.607 | 8.1     | 19.2 |
| 11 17         | 1 17.33                       | +5 48.8                    | 1.803    | 2.675 | 12.2    | 20.3 | 11 17         | 1 20.35                       | +6 56.1                    | 1.711    | 2.592 | 12.2    | 19.4 |
| 11 27         | 1 12.46                       | +5 34.4                    | 1.887    | 2.667 | 15.5    | 20.6 | 11 27         | 1 16.42                       | +6 21.4                    | 1.783    | 2.578 | 15.7    | 19.6 |
| <b>40911</b>  | 1999 <i>TU</i> <sub>152</sub> | 10 20.4 73°84 2°9/18.2 18  |          |       |         |      | <b>382688</b> | 2002 <i>VH</i> <sub>26</sub>  | 10 20.4 344°48 3°0/18.9 18 |          |       |         |      |
| 9 18          | 2 5.56                        | +5 16.2                    | 1.630    | 2.511 | 13.7    | 18.9 | 9 18          | 2 3.78                        | +5 21.9                    | 1.040    | 1.945 | 17.7    | 20.0 |
| 9 28          | 1 59.79                       | +4 29.1                    | 1.583    | 2.525 | 9.8     | 18.7 | 9 28          | 1 59.74                       | +5 9.7                     | 0.979    | 1.932 | 12.9    | 19.6 |
| 10 8          | 1 52.06                       | +3 37.5                    | 1.560    | 2.540 | 5.6     | 18.5 | 10 8          | 1 52.63                       | +4 51.8                    | 0.937    | 1.921 | 7.4     | 19.3 |
| 10 18         | 1 43.23                       | +2 47.5                    | 1.563    | 2.555 | 2.9     | 18.4 | 10 18         | 1 43.44                       | +4 34.2                    | 0.917    | 1.911 | 3.0     | 19.0 |
| 10 28         | 1 34.41                       | +2 5.4                     | 1.594    | 2.569 | 5.4     | 18.6 | 10 28         | 1 33.79                       | +4 24.1                    | 0.920    | 1.903 | 6.5     | 19.2 |
| 11 7          | 1 26.67                       | +1 36.8                    | 1.652    | 2.584 | 9.3     | 18.9 | 11 7          | 1 25.39                       | +4 28.2                    | 0.946    | 1.896 | 12.1    | 19.5 |
| 11 17         | 1 20.80                       | +1 24.5                    | 1.734    | 2.599 | 13.0    | 19.1 | 11 17         | 1 19.63                       | +4 50.3                    | 0.992    | 1.890 | 17.3    | 19.8 |
| 11 27         | 1 17.34                       | +1 29.9                    | 1.837    | 2.613 | 16.0    | 19.4 | 11 27         | 1 17.34                       | +5 31.8                    | 1.055    | 1.887 | 21.7    | 20.0 |
| <b>411849</b> | 2012 <i>DZ</i> <sub>72</sub>  | 10 20.4 130°39 3°8/24.1 17 |          |       |         |      | <b>116095</b> | 2003 <i>WD</i> <sub>127</sub> | 10 20.5 6°07 0°1/20.5 18   |          |       |         |      |
| 9 18          | 2 6.47                        | +23 17.6                   | 2.453    | 3.259 | 12.2    | 21.7 | 9 18          | 2 2.47                        | +11 37.2                   | 1.201    | 2.091 | 16.9    | 18.5 |
| 9 28          | 2 0.21                        | +23 40.4                   | 2.378    | 3.265 | 9.6     | 21.6 | 9 28          | 1 58.35                       | +11 30.7                   | 1.147    | 2.092 | 12.3    | 18.2 |
| 10 8          | 1 52.27                       | +23 49.3                   | 2.327    | 3.271 | 6.8     | 21.4 | 10 8          | 1 51.60                       | +11 11.4                   | 1.112    | 2.093 | 7.1     | 18.0 |
| 10 18         | 1 43.29                       | +23 44.0                   | 2.303    | 3.277 | 4.3     | 21.3 | 10 18         | 1 43.22                       | +10 43.5                   | 1.101    | 2.097 | 1.4     | 17.6 |
| 10 28         | 1 34.12                       | +23 26.1                   | 2.308    | 3.283 | 4.0     | 21.3 | 10 28         | 1 34.61                       | +10 13.1                   | 1.114    | 2.101 | 4.3     | 17.8 |
| 11 7          | 1 25.62                       | +22 59.4                   | 2.342    | 3.288 | 6.1     | 21.4 | 11 7          | 1 27.22                       | +9 47.6                    | 1.152    | 2.107 | 9.7     | 18.2 |
| 11 17         | 1 18.55                       | +22 28.3                   | 2.405    | 3.293 | 8.9     | 21.6 | 11 17         | 1 22.16                       | +9 33.0                    | 1.212    | 2.115 | 14.5    | 18.5 |
| 11 27         | 1 13.45                       | +21 58.2                   | 2.492    | 3.298 | 11.4    | 21.8 | 11 27         | 1 20.11                       | +9 33.4                    | 1.291    | 2.123 | 18.4    | 18.7 |
| <b>282425</b> | 2003 <i>UQ</i> <sub>374</sub> | 10 20.4 80°04 2°2/22.3 18  |          |       |         |      | <b>286821</b> | 2002 <i>LH</i> <sub>61</sub>  | 10 20.5 75°83 6°7/28.0 17  |          |       |         |      |
| 9 18          | 2 5.49                        | +18 43.7                   | 1.690    | 2.537 | 15.0</  |      |               |                               |                            |          |       |         |      |

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| 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$ | $r$     | $\beta$   | $V$  | 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$ | $r$     | $\beta$    | $V$  |
|---------------|------------------------|-----------------|----------|---------|-----------|------|---------------|------------------------|-----------------|----------|---------|------------|------|
| <b>82740</b>  | 2001 QY                |                 | 10 20.5  | 28°37'  | 0°5'/20.8 | 18   | <b>38371</b>  | 1999 RO <sub>167</sub> |                 | 10 20.5  | 338°88' | 1°3'/21.4  | 18   |
| 9 18          | 2 3.43                 | +14 8.2         | 1.073    | 1.962   | 18.5      | 18.1 | 9 18          | 2 5.54                 | +14 6.1         | 1.861    | 2.718   | 13.4       | 17.9 |
| 9 28          | 1 59.08                | +13 39.0        | 1.031    | 1.975   | 13.5      | 17.8 | 9 28          | 1 59.95                | +14 17.6        | 1.786    | 2.713   | 10.0       | 17.7 |
| 10 8          | 1 51.97                | +12 52.0        | 1.009    | 1.990   | 7.8       | 17.6 | 10 8          | 1 52.33                | +14 18.7        | 1.735    | 2.708   | 6.0        | 17.4 |
| 10 18         | 1 43.27                | +11 52.9        | 1.010    | 2.005   | 1.8       | 17.3 | 10 18         | 1 43.41                | +14 11.0        | 1.710    | 2.703   | 2.0        | 17.2 |
| 10 28         | 1 34.56                | +10 50.8        | 1.034    | 2.021   | 4.4       | 17.5 | 10 28         | 1 34.19                | +13 57.3        | 1.713    | 2.699   | 3.2        | 17.2 |
| 11 7          | 1 27.35                | +9 55.7         | 1.082    | 2.039   | 10.0      | 17.9 | 11 7          | 1 25.76                | +13 42.1        | 1.744    | 2.695   | 7.3        | 17.5 |
| 11 17         | 1 22.69                | +9 15.3         | 1.153    | 2.058   | 14.9      | 18.2 | 11 17         | 1 19.02                | +13 30.0        | 1.800    | 2.692   | 11.2       | 17.7 |
| 11 27         | 1 21.16                | +8 54.4         | 1.242    | 2.077   | 18.8      | 18.5 | 11 27         | 1 14.63                | +13 25.1        | 1.880    | 2.688   | 14.5       | 17.9 |
| <b>325954</b> | 2010 VS <sub>92</sub>  |                 | 10 20.5  | 191°71' | 0°3'/20.3 | 17   | <b>391877</b> | 2008 TV <sub>125</sub> |                 | 10 20.5  | 55°20'  | 1°0'/22.1  | 18   |
| 9 18          | 2 8.57                 | +11 54.8        | 1.624    | 2.488   | 14.7      | 21.8 | 9 18          | 1 55.87                | +17 1.0         | 4.097    | 4.929   | 7.2        | 20.9 |
| 9 28          | 2 2.27                 | +11 26.6        | 1.555    | 2.487   | 10.7      | 21.5 | 9 28          | 1 52.06                | +16 41.6        | 4.023    | 4.935   | 5.3        | 20.7 |
| 10 8          | 1 53.68                | +10 46.5        | 1.508    | 2.486   | 6.1       | 21.2 | 10 8          | 1 47.46                | +16 15.4        | 3.975    | 4.941   | 3.3        | 20.6 |
| 10 18         | 1 43.63                | +9 58.5         | 1.488    | 2.484   | 1.2       | 20.9 | 10 18         | 1 42.40                | +15 44.0        | 3.957    | 4.948   | 1.3        | 20.4 |
| 10 28         | 1 33.35                | +9 8.6          | 1.497    | 2.482   | 3.9       | 21.1 | 10 28         | 1 37.28                | +15 9.4         | 3.969    | 4.954   | 1.6        | 20.5 |
| 11 7          | 1 24.07                | +8 23.6         | 1.533    | 2.479   | 8.7       | 21.4 | 11 7          | 1 32.51                | +14 34.1        | 4.011    | 4.961   | 3.6        | 20.6 |
| 11 17         | 1 16.80                | +7 49.6         | 1.594    | 2.475   | 13.0      | 21.6 | 11 17         | 1 28.43                | +14 0.4         | 4.083    | 4.967   | 5.6        | 20.8 |
| 11 27         | 1 12.20                | +7 30.7         | 1.677    | 2.471   | 16.5      | 21.9 | 11 27         | 1 25.34                | +13 30.9        | 4.181    | 4.974   | 7.4        | 20.9 |
| <b>254789</b> | 2005 QQ <sub>67</sub>  |                 | 10 20.5  | 11°50'  | 1°7'/18.9 | 18   | <b>432275</b> | 2009 SV <sub>125</sub> |                 | 10 20.5  | 78°40'  | 1°3'/21.5  | 17   |
| 9 18          | 2 2.52                 | +8 1.3          | 1.803    | 2.680   | 12.8      | 20.1 | 9 18          | 2 5.53                 | +17 10.6        | 1.449    | 2.310   | 16.3       | 21.1 |
| 9 28          | 1 57.64                | +7 20.6         | 1.740    | 2.681   | 9.2       | 19.9 | 9 28          | 2 0.14                 | +16 25.8        | 1.394    | 2.322   | 12.0       | 20.9 |
| 10 8          | 1 50.91                | +6 32.8         | 1.702    | 2.682   | 5.2       | 19.6 | 10 8          | 1 52.44                | +15 22.3        | 1.360    | 2.334   | 7.2        | 20.6 |
| 10 18         | 1 43.07                | +5 42.6         | 1.690    | 2.684   | 1.8       | 19.4 | 10 18         | 1 43.41                | +14 4.7         | 1.352    | 2.346   | 2.2        | 20.4 |
| 10 28         | 1 35.09                | +4 56.0         | 1.706    | 2.686   | 4.4       | 19.6 | 10 28         | 1 34.33                | +12 41.1        | 1.371    | 2.358   | 3.6        | 20.5 |
| 11 7          | 1 27.95                | +4 18.7         | 1.749    | 2.688   | 8.4       | 19.8 | 11 7          | 1 26.45                | +11 21.0        | 1.417    | 2.370   | 8.5        | 20.8 |
| 11 17         | 1 22.45                | +3 54.8         | 1.817    | 2.690   | 12.0      | 20.1 | 11 17         | 1 20.71                | +10 12.9        | 1.488    | 2.382   | 12.8       | 21.1 |
| 11 27         | 1 19.14                | +3 46.8         | 1.907    | 2.693   | 15.1      | 20.3 | 11 27         | 1 17.69                | +9 22.5         | 1.580    | 2.394   | 16.5       | 21.4 |
| <b>43360</b>  | 2000 UU <sub>49</sub>  |                 | 10 20.5  | 133°86' | 0°5'/20.9 | 18   | <b>30131</b>  | 2000 FO <sub>46</sub>  |                 | 10 20.5  | 31°29'  | 0°7'/20.1  | 18   |
| 9 18          | 2 7.27                 | +15 13.4        | 1.579    | 2.438   | 15.2      | 18.7 | 9 18          | 2 9.37                 | +9 34.1         | 1.060    | 1.950   | 18.6       | 18.5 |
| 9 28          | 2 1.25                 | +14 25.0        | 1.519    | 2.448   | 11.2      | 18.4 | 9 28          | 2 3.58                 | +9 32.8         | 1.011    | 1.956   | 13.5       | 18.3 |
| 10 8          | 1 53.02                | +13 20.7        | 1.482    | 2.458   | 6.5       | 18.2 | 10 8          | 1 54.68                | +9 20.6         | 0.981    | 1.963   | 7.7        | 18.0 |
| 10 18         | 1 43.49                | +12 5.1         | 1.472    | 2.467   | 1.5       | 17.9 | 10 18         | 1 43.89                | +9 1.9          | 0.975    | 1.970   | 1.5        | 17.6 |
| 10 28         | 1 33.89                | +10 45.9        | 1.489    | 2.475   | 3.6       | 18.1 | 10 28         | 1 32.92                | +8 43.1         | 0.992    | 1.978   | 5.0        | 17.9 |
| 11 7          | 1 25.41                | +9 31.8         | 1.534    | 2.483   | 8.4       | 18.4 | 11 7          | 1 23.53                | +8 31.3         | 1.034    | 1.986   | 10.9       | 18.2 |
| 11 17         | 1 18.98                | +8 30.0         | 1.605    | 2.491   | 12.6      | 18.7 | 11 17         | 1 16.96                | +8 31.9         | 1.097    | 1.995   | 16.0       | 18.6 |
| 11 27         | 1 15.18                | +7 45.7         | 1.697    | 2.498   | 16.1      | 18.9 | 11 27         | 1 13.92                | +8 48.0         | 1.178    | 2.005   | 20.2       | 18.9 |
| <b>471014</b> | 2009 SG <sub>275</sub> |                 | 10 20.5  | 305°20' | 3°3'/16.8 | 18   | <b>247784</b> | 2003 RR <sub>13</sub>  |                 | 10 20.5  | 337°31' | 14°5'/1.4  | 17   |
| 9 18          | 1 59.31                | +5 35.7         | 2.002    | 2.884   | 11.5      | 20.6 | 9 18          | 2 11.64                | +46 53.5        | 1.887    | 2.558   | 19.6       | 19.0 |
| 9 28          | 1 55.32                | +4 3.2          | 1.918    | 2.862   | 8.3       | 20.4 | 9 28          | 2 5.86                 | +48 55.2        | 1.803    | 2.543   | 18.2       | 18.8 |
| 10 8          | 1 49.63                | +2 22.0         | 1.860    | 2.840   | 4.9       | 20.1 | 10 8          | 1 56.54                | +50 30.2        | 1.735    | 2.529   | 16.6       | 18.7 |
| 10 18         | 1 42.84                | +0 39.0         | 1.830    | 2.818   | 3.3       | 20.0 | 10 18         | 1 44.39                | +51 29.8        | 1.685    | 2.515   | 15.4       | 18.6 |
| 10 28         | 1 35.77                | -0 57.4         | 1.829    | 2.796   | 5.8       | 20.1 | 10 28         | 1 30.96                | +51 48.2        | 1.655    | 2.503   | 14.6       | 18.5 |
| 11 7          | 1 29.31                | -2 19.6         | 1.855    | 2.774   | 9.4       | 20.3 | 11 7          | 1 18.28                | +51 25.7        | 1.646    | 2.491   | 14.7       | 18.5 |
| 11 17         | 1 24.22                | -3 22.0         | 1.906    | 2.753   | 12.8      | 20.5 | 11 17         | 1 8.22                 | +50 28.7        | 1.657    | 2.481   | 15.5       | 18.5 |
| 11 27         | 1 21.10                | -4 1.8          | 1.979    | 2.732   | 15.8      | 20.6 | 11 27         | 1 2.11                 | +49 8.6         | 1.688    | 2.471   | 16.9       | 18.6 |
| <b>347240</b> | 2011 JS <sub>17</sub>  |                 | 10 20.5  | 42°04'  | 5°4'/16.7 | 18   | <b>271868</b> | 2004 TC <sub>326</sub> |                 | 10 20.5  | 320°08' | 6°2'/25.3  | 17   |
| 9 18          | 2 4.63                 | +1 16.0         | 1.238    | 2.136   | 15.9      | 19.5 | 9 18          | 2 6.08                 | +27 21.0        | 1.955    | 2.757   | 15.0       | 20.5 |
| 9 28          | 1 59.42                | +0 3.4          | 1.209    | 2.158   | 11.4      | 19.3 | 9 28          | 2 0.60                 | +28 5.0         | 1.867    | 2.744   | 12.3       | 20.3 |
| 10 8          | 1 51.93                | -1 8.7          | 1.203    | 2.181   | 7.2       | 19.1 | 10 8          | 1 52.86                | +28 30.6        | 1.801    | 2.732   | 9.4        | 20.1 |
| 10 18         | 1 43.25                | -2 10.9         | 1.221    | 2.205   | 5.4       | 19.1 | 10 18         | 1 43.56                | +28 35.4        | 1.759    | 2.720   | 6.9        | 19.9 |
| 10 28         | 1 34.76                | -2 55.0         | 1.264    | 2.229   | 8.0       | 19.3 | 10 28         | 1 33.75                | +28 19.6        | 1.743    | 2.708   | 6.3        | 19.9 |
| 11 7          | 1 27.66                | -3 15.7         | 1.331    | 2.254   | 11.9      | 19.6 | 11 7          | 1 24.65                | +27 47.2        | 1.755    | 2.697   | 8.1        | 19.9 |
| 11 17         | 1 22.82                | -3 12.2         | 1.420    | 2.280   | 15.6      | 19.9 | 11 17         | 1 17.30                | +27 4.4         | 1.792    | 2.686   | 11.1       | 20.1 |
| 11 27         | 1 20.68                | -2 45.9         | 1.527    | 2.305   | 18.6      | 20.2 | 11 27         | 1 12.49                | +26 19.1        | 1.853    | 2.675   | 14.1       | 20.3 |
| <b>433343</b> | 2013 RS <sub>47</sub>  |                 | 10 20.5  | 304°02' | 1°4'/21.4 | 17   | <b>25710</b>  | Petelandgren           |                 | 10 20.5  | 330°42' | 6°0'/17.3  | 18   |
| 9 18          | 2 6.76                 | +15 26.3        | 1.366    | 2.234   | 16.7      | 21.3 | 9 18          | 2 6.35                 | -0 40.1         | 1.118    | 2.019   | 17.0       | 17.3 |
| 9 28          | 2 1.39                 | +15 12.9        | 1.297    | 2.229   | 12.4      | 21.0 | 9 28          | 2 1.50                 | -1 12.4         | 1.055    | 2.004   | 12.6       | 17.0 |
| 10 8          | 1 53.37                | +14 42.7        | 1.250    | 2.225   | 7.5       | 20.8 | 10 8          | 1 53.63                | -1 43.1         | 1.011    | 1.990   | 8.2        | 16.7 |
| 10 18         | 1 43.61                | +13 58.4        | 1.227    | 2.221   | 2.3       | 20.4 | 10 18         | 1 43.72                | -2 4.1          | 0.991    | 1.976   | 6.0        | 16.5 |
| 10 28         | 1 33.51                | +13 6.1         | 1.230    | 2.217   | 4.0       | 20.5 | 10 28         | 1 33.33                | -2 7.1          | 0.994    | 1.964   | 8.9        | 16.7 |
| 11 7          | 1 24.52                | +12 14.1        | 1.258    | 2.213   | 9.2       | 20.8 | 11 7          | 1 24.15                | -1 46.6         | 1.019    | 1.952   | 13.6       | 16.9 |
| 11 17         | 1 17.81                | +11 30.5        | 1.311    | 2.209   | 14.0      | 21.1 | 11 17         | 1 17.53                | -1 1.7          | 1.065    | 1.941   | 18.3       | 17.1 |
| 11 27         | 1 14.15                | +11 1.4         | 1.384    | 2.205   | 18.0      | 21.4 | 11 27         | 1 14.32                | +0 6.2          | 1.129    | 1.932   | 22.4       | 17.4 |
| <b>129624</b> | 1998 FT <sub>25</sub>  |                 | 10 20.5  | 168°27' | 2°8'/17.4 | 18   | <b>96762</b>  | 1999 RW <sub>28</sub>  |                 | 10 20.5  | 72°19'  | 10°7'/28.2 | 18   |
| 9 18          | 2 4.04                 | +5 10.0         | 2.228    | 3.098   | 11.0      | 20.7 | 9 18          | 2 15.14                | +36 41.1        | 1.799    | 2.541   | 18.3       | 19.2 |
| 9 28          | 1 58.38                | +3 55.2         | 2.166    | 3.103   | 7.8       | 20.5 | 9 28          | 2 7.73                 | +38 17.0        | 1.726    | 2.543   | 15.9       | 19.1 |
| 10 8          | 1 51.21                | +2 35.7         | 2.129    | 3.107   | 4.6       | 20.3 | 10 8          | 1 57.21                | +39 27.9        | 1.671    | 2.546   | 13.5       | 18.9 |
| 10 18         | 1 43.14                | +1 17.0         | 2.122    | 3.111   | 2.8       | 20.2 | 10 18         | 1 44.47                | +40 7.2         | 1.640    | 2.548   | 11.5       | 18.8 |
| 10 28         | 1 35.00                | +0 5.5          | 2.145    | 3.114   | 4.9       | 20.3 | 10 28         | 1 31.00                | +40 11.8        | 1.632    | 2.550   | 10.7       | 18.8 |
| 11 7          | 1 27.58                | -0 53.4         | 2.197    | 3.116   | 8.1       | 20.5 | 11 7          | 1 18.54                | +39 45.0        | 1.650    | 2.553   | 11.4       | 18.8 |
| 11 17         | 1 21.56                | -1 36.0         | 2.275    | 3.117   | 11.2      | 20.7 | 11 17         | 1 8.55                 | +38 54.8        | 1.691    | 2.555   | 13.3       | 19.0 |
| 11 27         | 1 17.41                | -2 0.6          | 2.376    | 3.118   | 13.7      | 20.9 | 11 27         | 1 1.99                 | +37 52.5        | 1.755    | 2.558   | 15.6       | 19.1 |
| <b>451134</b> | 2009 QV <sub>2</sub>   |                 | 10 20.5  | 23°51'  | 1°0'/19.7 | 17   | <b>521424</b> | 2015 ME <sub>148</sub> |                 | 10 20.5  | 354°62' | 1°5'/21.7  | 17   |
| 9 18          | 2 2.55                 | +9 29.7         | 1.639    | 2.517   | 13.8      | 20.7 | 9 18          | 2 0.48                 | +16 30.2        | 1.387</  |         |            |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$  | $r$     | $\beta$   | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$     | $\beta$   | $V$  |
|---------------|-------------------------------|-----------------|-----------|---------|-----------|------|---------------|-------------------------------|-----------------|----------|---------|-----------|------|
| <b>248311</b> | 2005 <i>NM</i> <sub>28</sub>  |                 | 10 20.5   | 64°49'  | 0°1'/20.4 | 18   | <b>447439</b> | 2006 <i>DX</i> <sub>204</sub> |                 | 10 20.5  | 251°39' | 4°4'/16.2 | 17   |
| 9 18          | 2 3.79                        | +12 53.8        | 1.806     | 2.671   | 13.4      | 20.7 | 9 18          | 2 5.52                        | - 4 20.8        | 2.626    | 3.491   | 9.7       | 21.9 |
| 9 28          | 1 58.48                       | +12 16.7        | 1.754     | 2.686   | 9.7       | 20.5 | 9 28          | 1 59.40                       | - 4 49.0        | 2.548    | 3.475   | 7.3       | 21.8 |
| 10 8          | 1 51.36                       | +11 28.6        | 1.725     | 2.702   | 5.5       | 20.3 | 10 8          | 1 51.84                       | - 5 14.0        | 2.495    | 3.459   | 5.1       | 21.6 |
| 10 18         | 1 43.22                       | +10 33.7        | 1.723     | 2.718   | 1.1       | 20.0 | 10 18         | 1 43.37                       | - 5 31.8        | 2.472    | 3.443   | 4.4       | 21.5 |
| 10 28         | 1 35.07                       | + 9 37.9        | 1.749     | 2.734   | 3.3       | 20.2 | 10 28         | 1 34.70                       | - 5 38.7        | 2.478    | 3.426   | 5.9       | 21.6 |
| 11 7          | 1 27.86                       | + 8 47.3        | 1.803     | 2.750   | 7.5       | 20.5 | 11 7          | 1 26.58                       | - 5 32.3        | 2.513    | 3.408   | 8.3       | 21.7 |
| 11 17         | 1 22.36                       | + 8 7.2         | 1.883     | 2.766   | 11.1      | 20.8 | 11 17         | 1 19.64                       | - 5 11.6        | 2.574    | 3.391   | 10.8      | 21.9 |
| 11 27         | 1 19.06                       | + 7 41.0        | 1.985     | 2.783   | 14.2      | 21.0 | 11 27         | 1 14.40                       | - 4 36.6        | 2.658    | 3.373   | 13.1      | 22.0 |
| <b>107430</b> | 2001 <i>DU</i> <sub>13</sub>  |                 | 10 20.5   | 103°27' | 2°8'/18.1 | 18   | <b>407183</b> | 2009 <i>UN</i> <sub>85</sub>  |                 | 10 20.5  | 69°60'  | 0°4'/20.9 | 18   |
| 9 18          | 2 7.26                        | + 3 43.0        | 1.986     | 2.856   | 12.1      | 19.7 | 9 18          | 2 0.92                        | +14 35.8        | 2.285    | 3.139   | 11.4      | 21.2 |
| 9 28          | 2 0.74                        | + 3 7.8         | 1.939     | 2.876   | 8.6       | 19.5 | 9 28          | 1 56.22                       | +13 54.9        | 2.216    | 3.143   | 8.3       | 21.0 |
| 10 8          | 1 52.55                       | + 2 30.6        | 1.918     | 2.895   | 5.0       | 19.3 | 10 8          | 1 50.05                       | +13 3.1         | 2.172    | 3.146   | 4.8       | 20.8 |
| 10 18         | 1 43.46                       | + 1 55.9        | 1.924     | 2.914   | 2.8       | 19.2 | 10 18         | 1 43.00                       | +12 3.8         | 2.155    | 3.150   | 1.2       | 20.5 |
| 10 28         | 1 34.41                       | + 1 28.4        | 1.960     | 2.932   | 4.9       | 19.4 | 10 28         | 1 35.85                       | +11 1.7         | 2.168    | 3.154   | 2.7       | 20.7 |
| 11 7          | 1 26.30                       | + 1 12.1        | 2.024     | 2.950   | 8.3       | 19.7 | 11 7          | 1 29.37                       | +10 2.3         | 2.210    | 3.158   | 6.3       | 20.9 |
| 11 17         | 1 19.84                       | + 1 9.0         | 2.114     | 2.968   | 11.4      | 19.9 | 11 17         | 1 24.20                       | + 9 10.7        | 2.279    | 3.161   | 9.5       | 21.1 |
| 11 27         | 1 15.49                       | + 1 20.2        | 2.226     | 2.985   | 14.1      | 20.1 | 11 27         | 1 20.83                       | + 8 30.5        | 2.372    | 3.165   | 12.3      | 21.3 |
| <b>444253</b> | 2005 <i>UT</i> <sub>195</sub> |                 | 10 20.5   | 71°22'  | 0°5'/20.0 | 18   | <b>362280</b> | 2009 <i>RB</i> <sub>15</sub>  |                 | 10 20.5  | 74°12'  | 2°1'/18.2 | 18   |
| 9 18          | 2 3.23                        | +11 28.2        | 1.953     | 2.818   | 12.5      | 21.4 | 9 18          | 2 1.54                        | + 8 12.9        | 2.123    | 2.995   | 11.4      | 20.5 |
| 9 28          | 1 58.00                       | +10 52.0        | 1.896     | 2.829   | 9.0       | 21.3 | 9 28          | 1 56.57                       | + 6 51.0        | 2.078    | 3.017   | 8.0       | 20.4 |
| 10 8          | 1 51.08                       | +10 6.6         | 1.862     | 2.840   | 5.1       | 21.0 | 10 8          | 1 50.17                       | + 5 22.9        | 2.059    | 3.039   | 4.5       | 20.2 |
| 10 18         | 1 43.18                       | + 9 15.9        | 1.856     | 2.851   | 1.0       | 20.8 | 10 18         | 1 43.01                       | + 3 54.5        | 2.069    | 3.061   | 2.1       | 20.0 |
| 10 28         | 1 35.21                       | + 8 25.3        | 1.878     | 2.863   | 3.4       | 21.0 | 10 28         | 1 35.89                       | + 2 32.7        | 2.108    | 3.083   | 4.3       | 20.2 |
| 11 7          | 1 28.09                       | + 7 40.4        | 1.929     | 2.874   | 7.3       | 21.3 | 11 7          | 1 29.59                       | + 1 23.1        | 2.176    | 3.105   | 7.6       | 20.5 |
| 11 17         | 1 22.54                       | + 7 5.7         | 2.006     | 2.885   | 10.8      | 21.5 | 11 17         | 1 24.69                       | + 0 29.9        | 2.270    | 3.126   | 10.7      | 20.7 |
| 11 27         | 1 19.06                       | + 6 44.3        | 2.105     | 2.896   | 13.7      | 21.7 | 11 27         | 1 21.61                       | - 0 5.3         | 2.387    | 3.148   | 13.2      | 20.9 |
| <b>73432</b>  | 2002 <i>LD</i> <sub>57</sub>  |                 | 10 20.5   | 110°29' | 6°2'/28.1 | 18   | <b>212868</b> | 2007 <i>VB</i> <sub>143</sub> |                 | 10 20.5  | 339°75' | 1°9'/18.9 | 18   |
| 9 18          | 2 5.17                        | +33 58.9        | 2.590     | 3.336   | 13.2      | 19.8 | 9 18          | 2 4.20                        | + 7 31.9        | 1.759    | 2.635   | 13.1      | 20.6 |
| 9 28          | 1 59.34                       | +34 14.7        | 2.517     | 3.348   | 11.1      | 19.6 | 9 28          | 1 58.96                       | + 6 55.0        | 1.694    | 2.634   | 9.4       | 20.4 |
| 10 8          | 1 51.84                       | +34 10.8        | 2.465     | 3.360   | 8.9       | 19.5 | 10 8          | 1 51.76                       | + 6 11.1        | 1.652    | 2.632   | 5.3       | 20.1 |
| 10 18         | 1 43.34                       | +33 46.3        | 2.438     | 3.371   | 7.0       | 19.4 | 10 18         | 1 43.36                       | + 5 25.1        | 1.637    | 2.631   | 1.9       | 19.9 |
| 10 28         | 1 34.70                       | +33 2.4         | 2.438     | 3.382   | 6.2       | 19.4 | 10 28         | 1 34.79                       | + 4 42.8        | 1.650    | 2.630   | 4.5       | 20.1 |
| 11 7          | 1 26.80                       | +32 3.5         | 2.466     | 3.393   | 6.9       | 19.4 | 11 7          | 1 27.08                       | + 4 10.1        | 1.690    | 2.629   | 8.6       | 20.3 |
| 11 17         | 1 20.39                       | +30 55.5        | 2.522     | 3.404   | 8.7       | 19.6 | 11 17         | 1 21.08                       | + 3 50.9        | 1.756    | 2.628   | 12.4      | 20.6 |
| 11 27         | 1 15.97                       | +29 45.1        | 2.603     | 3.415   | 10.8      | 19.7 | 11 27         | 1 17.38                       | + 3 47.7        | 1.842    | 2.628   | 15.6      | 20.8 |
| <b>481635</b> | 2007 <i>VO</i> <sub>38</sub>  |                 | 10 20.5   | 11°80'  | 6°9'/26.5 | 16   | <b>101143</b> | 1998 <i>RS</i> <sub>69</sub>  |                 | 10 20.5  | 340°77' | 2°0'/21.7 | 18   |
| 9 18          | 2 1.40                        | +29 14.2        | 1.358     | 2.183   | 19.2      | 19.6 | 9 18          | 2 5.77                        | +14 36.8        | 1.388    | 2.259   | 16.3      | 18.9 |
| 9 28          | 1 57.64                       | +29 16.7        | 1.295     | 2.186   | 15.6      | 19.4 | 9 28          | 2 0.79                        | +15 1.7         | 1.315    | 2.247   | 12.2      | 18.6 |
| 10 8          | 1 51.27                       | +28 48.7        | 1.251     | 2.190   | 11.8      | 19.2 | 10 8          | 1 53.15                       | +15 13.9        | 1.262    | 2.237   | 7.6       | 18.3 |
| 10 18         | 1 43.25                       | +27 49.4        | 1.228     | 2.196   | 8.2       | 19.0 | 10 18         | 1 43.69                       | +15 14.0        | 1.234    | 2.227   | 2.8       | 18.0 |
| 10 28         | 1 35.00                       | +26 23.6        | 1.229     | 2.202   | 7.0       | 19.0 | 10 28         | 1 33.75                       | +15 5.1         | 1.232    | 2.219   | 4.0       | 18.0 |
| 11 7          | 1 27.96                       | +24 41.6        | 1.255     | 2.209   | 9.1       | 19.1 | 11 7          | 1 24.78                       | +14 52.6        | 1.255    | 2.211   | 9.0       | 18.3 |
| 11 17         | 1 23.23                       | +22 55.8        | 1.305     | 2.218   | 12.8      | 19.4 | 11 17         | 1 18.01                       | +14 42.7        | 1.302    | 2.204   | 13.7      | 18.6 |
| 11 27         | 1 21.48                       | +21 18.1        | 1.376     | 2.227   | 16.4      | 19.6 | 11 27         | 1 14.27                       | +14 40.9        | 1.369    | 2.199   | 17.7      | 18.8 |
| <b>210614</b> | 2000 <i>CK</i> <sub>81</sub>  |                 | 10 20.5   | 298°91' | 4°2'/16.9 | 18   | <b>228088</b> | 2008 <i>RM</i> <sub>105</sub> |                 | 10 20.5  | 148°37' | 0°2'/20.1 | 18   |
| 9 18          | 2 2.98                        | + 2 54.3        | 1.674     | 2.560   | 13.1      | 20.6 | 9 18          | 1 55.30                       | +10 49.8        | 4.419    | 5.271   | 6.3       | 20.9 |
| 9 28          | 1 58.35                       | + 1 48.9        | 1.591     | 2.535   | 9.6       | 20.4 | 9 28          | 1 51.63                       | +10 25.8        | 4.343    | 5.271   | 4.5       | 20.8 |
| 10 8          | 1 51.58                       | + 0 37.9        | 1.531     | 2.510   | 6.0       | 20.1 | 10 8          | 1 47.24                       | + 9 57.8        | 4.295    | 5.271   | 2.6       | 20.7 |
| 10 18         | 1 43.34                       | - 0 31.9        | 1.498     | 2.485   | 4.2       | 19.9 | 10 18         | 1 42.44                       | + 9 27.5        | 4.276    | 5.271   | 0.5       | 20.5 |
| 10 28         | 1 34.68                       | - 1 32.0        | 1.493     | 2.460   | 6.8       | 20.0 | 10 28         | 1 37.57                       | + 8 57.0        | 4.288    | 5.271   | 1.7       | 20.6 |
| 11 7          | 1 26.73                       | - 2 15.5        | 1.513     | 2.435   | 10.8      | 20.2 | 11 7          | 1 32.99                       | + 8 28.5        | 4.330    | 5.271   | 3.7       | 20.7 |
| 11 17         | 1 20.49                       | - 2 37.6        | 1.556     | 2.410   | 14.8      | 20.4 | 11 17         | 1 29.03                       | + 8 3.8         | 4.401    | 5.271   | 5.6       | 20.9 |
| 11 27         | 1 16.68                       | - 2 36.6        | 1.619     | 2.386   | 18.2      | 20.6 | 11 27         | 1 25.96                       | + 7 44.7        | 4.499    | 5.272   | 7.2       | 21.0 |
| <b>220713</b> | 2004 <i>SS</i> <sub>17</sub>  |                 | 10 20.5   | 26°06'  | 5°6'/16.2 | 18   | <b>298653</b> | 2004 <i>BJ</i> <sub>148</sub> |                 | 10 20.5  | 231°39' | 2°0'/18.8 | 18   |
| 9 18          | 2 3.94                        | - 3 13.7        | 1.718     | 2.603   | 12.9      | 19.7 | 9 18          | 2 4.30                        | + 6 49.5        | 1.865    | 2.740   | 12.6      | 20.8 |
| 9 28          | 1 58.63                       | - 3 56.7        | 1.672     | 2.611   | 9.6       | 19.5 | 9 28          | 1 58.93                       | + 6 11.4        | 1.800    | 2.739   | 9.0       | 20.6 |
| 10 8          | 1 51.48                       | - 4 35.7        | 1.649     | 2.619   | 6.6       | 19.4 | 10 8          | 1 51.70                       | + 5 27.4        | 1.759    | 2.739   | 5.1       | 20.3 |
| 10 18         | 1 43.27                       | - 5 4.5         | 1.653     | 2.628   | 5.6       | 19.3 | 10 18         | 1 43.36                       | + 4 42.1        | 1.745    | 2.739   | 2.1       | 20.1 |
| 10 28         | 1 35.04                       | - 5 17.7        | 1.683     | 2.637   | 7.5       | 19.5 | 10 28         | 1 34.85                       | + 4 1.2         | 1.760    | 2.738   | 4.5       | 20.3 |
| 11 7          | 1 27.77                       | - 5 12.3        | 1.739     | 2.647   | 10.6      | 19.7 | 11 7          | 1 27.17                       | + 3 29.9        | 1.802    | 2.738   | 8.4       | 20.5 |
| 11 17         | 1 22.24                       | - 4 47.7        | 1.818     | 2.658   | 13.7      | 19.9 | 11 17         | 1 21.11                       | + 3 12.0        | 1.869    | 2.738   | 12.0      | 20.8 |
| 11 27         | 1 18.96                       | - 4 5.2         | 1.918     | 2.669   | 16.3      | 20.1 | 11 27         | 1 17.25                       | + 3 9.7         | 1.959    | 2.737   | 15.0      | 21.0 |
| <b>289870</b> | 2005 <i>MM</i> <sub>17</sub>  |                 | 10 20.5   | 101°99' | 1°9'/18.9 | 18   | <b>354322</b> | 2002 <i>VA</i> <sub>146</sub> |                 | 10 20.5  | 290°77' | 1°5'/19.1 | 18   |
| 9 18          | 2 8.39                        | + 8 10.1        | 1.605     | 2.478   | 14.4      | 21.0 | 9 18          | 2 2.91                        | + 8 58.4        | 1.842    | 2.715   | 12.7      | 21.1 |
| 9 28          | 2 1.87                        | + 7 21.0        | 1.560     | 2.498   | 10.2      | 20.8 | 9 28          | 1 58.00                       | + 8 11.6        | 1.770    | 2.709   | 9.2       | 20.9 |
| 10 8          | 1 53.31                       | + 6 24.4        | 1.538     | 2.518   | 5.7       | 20.6 | 10 8          | 1 51.22                       | + 7 16.1        | 1.723    | 2.703   | 5.2       | 20.7 |
| 10 18         | 1 43.64                       | + 5 26.1        | 1.543     | 2.537   | 2.0       | 20.4 | 10 18         | 1 43.27                       | + 6 16.6        | 1.703    | 2.697   | 1.6       | 20.4 |
| 10 28         | 1 34.02                       | + 4 33.2        | 1.576     | 2.555   | 4.8       | 20.6 | 10 28         | 1 35.10                       | + 5 19.6        | 1.711    | 2.691   | 4.2       | 20.6 |
| 11 7          | 1 25.59                       | + 3 51.7        | 1.636     | 2.574   | 9.0       | 20.9 | 11 7          | 1 27.72                       | + 4 31.4        | 1.746    | 2.686   | 8.3       | 20.8 |
| 11 17         | 1 19.16                       | + 3 25.8        | 1.722     | 2.591   | 12.8      | 21.2 | 11 17         | 1 21.95                       | + 3 56.7        | 1.807    | 2.680   | 12.1      | 21.1 |
| 11 27         | 1 15.25                       | + 3 17.5        | 1.829     | 2.608   | 15.9      | 21.5 | 11 27         | 1 18.37                       | + 3 38.6        | 1.889    | 2.674   | 15.3      | 21.3 |
| <b>407601</b> | 2011 <i>BO</i> <sub>32</sub>  |                 | 10 20.5</ |         |           |      |               |                               |                 |          |         |           |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$              | $\Delta$ | $r$   | $\beta$ | $V$  | 2020  | $\alpha_{2000}$ | $\delta_{2000}$               | $\Delta$                     | $r$   | $\beta$ | $V$  |  |
|---------------|-------------------------------|------------------------------|----------|-------|---------|------|-------|-----------------|-------------------------------|------------------------------|-------|---------|------|--|
| <b>509569</b> | 2008 <i>CJ</i> <sub>70</sub>  | 10 20.5 161°33' 20.3"/7.1 18 |          |       |         |      |       | <b>415199</b>   | 2012 <i>GM</i> <sub>39</sub>  | 10 20.5 258°62' 3.6"/24.4 18 |       |         |      |  |
| 9 18          | 2 17.89                       | -15 50.4                     | 0.684    | 1.587 | 24.4    | 22.4 | 9 18  | 2 2.51          | +24 13.7                      | 2.351                        | 3.163 | 12.5    | 20.6 |  |
| 9 28          | 2 10.55                       | -20 16.8                     | 0.670    | 1.597 | 21.3    | 22.3 | 9 28  | 1 57.52         | +24 3.8                       | 2.267                        | 3.158 | 9.8     | 20.4 |  |
| 10 8          | 1 58.88                       | -24 6.3                      | 0.675    | 1.604 | 20.3    | 22.3 | 10 8  | 1 50.89         | +23 37.6                      | 2.205                        | 3.153 | 6.9     | 20.2 |  |
| 10 18         | 1 44.79                       | -26 49.8                     | 0.697    | 1.611 | 21.6    | 22.4 | 10 18 | 1 43.23         | +22 55.6                      | 2.171                        | 3.148 | 4.3     | 20.1 |  |
| 10 28         | 1 30.97                       | -28 11.5                     | 0.736    | 1.615 | 24.5    | 22.6 | 10 28 | 1 35.36         | +22 0.8                       | 2.164                        | 3.143 | 3.8     | 20.0 |  |
| 11 7          | 1 19.85                       | -28 14.6                     | 0.788    | 1.618 | 27.7    | 22.9 | 11 7  | 1 28.13         | +20 58.4                      | 2.187                        | 3.138 | 6.1     | 20.2 |  |
| 11 17         | 1 12.86                       | -27 12.9                     | 0.851    | 1.619 | 30.8    | 23.1 | 11 17 | 1 22.28         | +19 54.3                      | 2.237                        | 3.132 | 9.1     | 20.3 |  |
| 11 27         | 1 10.47                       | -25 23.1                     | 0.922    | 1.619 | 33.2    | 23.4 | 11 27 | 1 18.36         | +18 54.5                      | 2.312                        | 3.127 | 11.9    | 20.5 |  |
| <b>22056</b>  | 2000 <i>AU</i> <sub>31</sub>  | 10 20.5 6°42' 0.3"/20.0 18 R |          |       |         |      |       | <b>453210</b>   | 2008 <i>GA</i> <sub>128</sub> | 10 20.5 160°51' 5.8"/14.7 18 |       |         |      |  |
| 9 18          | 1 57.41                       | + 9 53.3                     | 3.537    | 4.393 | 7.6     | 18.3 | 9 18  | 2 3.99          | - 7 13.5                      | 2.342                        | 3.213 | 10.5    | 21.3 |  |
| 9 28          | 1 53.29                       | + 9 39.4                     | 3.464    | 4.394 | 5.5     | 18.2 | 9 28  | 1 58.33         | - 8 6.1                       | 2.290                        | 3.216 | 8.1     | 21.2 |  |
| 10 8          | 1 48.24                       | + 9 21.3                     | 3.418    | 4.396 | 3.1     | 18.0 | 10 8  | 1 51.23         | - 8 53.0                      | 2.263                        | 3.219 | 6.2     | 21.1 |  |
| 10 18         | 1 42.65                       | + 9 0.8                      | 3.402    | 4.397 | 0.6     | 17.8 | 10 18 | 1 43.30         | - 9 29.2                      | 2.264                        | 3.221 | 5.9     | 21.1 |  |
| 10 28         | 1 36.98                       | + 8 40.4                     | 3.415    | 4.399 | 2.1     | 17.9 | 10 28 | 1 35.31         | - 9 50.0                      | 2.293                        | 3.223 | 7.3     | 21.2 |  |
| 11 7          | 1 31.68                       | + 8 22.3                     | 3.459    | 4.401 | 4.5     | 18.1 | 11 7  | 1 28.02         | - 9 52.9                      | 2.349                        | 3.225 | 9.6     | 21.3 |  |
| 11 17         | 1 27.18                       | + 8 8.7                      | 3.531    | 4.403 | 6.8     | 18.3 | 11 17 | 1 22.07         | - 9 37.5                      | 2.429                        | 3.227 | 12.0    | 21.5 |  |
| 11 27         | 1 23.82                       | + 8 1.6                      | 3.628    | 4.406 | 8.7     | 18.4 | 11 27 | 1 17.91         | - 9 4.7                       | 2.530                        | 3.229 | 14.0    | 21.7 |  |
| <b>121245</b> | 1999 <i>RO</i> <sub>51</sub>  | 10 20.5 57°23' 0.4"/20.1 18  |          |       |         |      |       | <b>229252</b>   | 2004 <i>YW</i> <sub>3</sub>   | 10 20.5 236°84' 3.9"/16.4 18 |       |         |      |  |
| 9 18          | 2 5.07                        | +12 41.5                     | 1.443    | 2.317 | 15.6    | 19.1 | 9 18  | 2 1.97          | - 0 50.4                      | 2.430                        | 3.305 | 10.0    | 20.2 |  |
| 9 28          | 1 59.68                       | +11 51.6                     | 1.400    | 2.338 | 11.2    | 18.9 | 9 28  | 1 56.90         | - 1 37.4                      | 2.365                        | 3.302 | 7.3     | 20.0 |  |
| 10 8          | 1 52.15                       | +10 48.6                     | 1.379    | 2.358 | 6.3     | 18.6 | 10 8  | 1 50.44         | - 2 23.9                      | 2.326                        | 3.298 | 4.8     | 19.8 |  |
| 10 18         | 1 43.43                       | + 9 38.6                     | 1.384    | 2.379 | 1.2     | 18.4 | 10 18 | 1 43.15         | - 3 5.2                       | 2.315                        | 3.293 | 3.9     | 19.8 |  |
| 10 28         | 1 34.79                       | + 8 29.6                     | 1.415    | 2.400 | 4.0     | 18.6 | 10 28 | 1 35.73         | - 3 36.8                      | 2.333                        | 3.289 | 5.6     | 19.9 |  |
| 11 7          | 1 27.37                       | + 7 29.5                     | 1.474    | 2.422 | 8.7     | 19.0 | 11 7  | 1 28.92         | - 3 55.3                      | 2.379                        | 3.285 | 8.2     | 20.0 |  |
| 11 17         | 1 22.03                       | + 6 44.4                     | 1.556    | 2.443 | 12.9    | 19.3 | 11 17 | 1 23.32         | - 3 58.8                      | 2.450                        | 3.281 | 10.9    | 20.2 |  |
| 11 27         | 1 19.27                       | + 6 17.7                     | 1.660    | 2.465 | 16.2    | 19.5 | 11 27 | 1 19.41         | - 3 46.9                      | 2.543                        | 3.276 | 13.1    | 20.4 |  |
| <b>60768</b>  | 2000 <i>GY</i> <sub>136</sub> | 10 20.5 267°27' 2.2"/18.4 18 |          |       |         |      |       | <b>96545</b>    | 1998 <i>SQ</i> <sub>53</sub>  | 10 20.5 18°13' 6.2"/25.2 18  |       |         |      |  |
| 9 18          | 2 2.21                        | + 7 46.7                     | 1.938    | 2.813 | 12.2    | 19.1 | 9 18  | 2 6.66          | +26 10.1                      | 1.735                        | 2.549 | 16.1    | 18.6 |  |
| 9 28          | 1 57.44                       | + 6 41.9                     | 1.863    | 2.802 | 8.7     | 18.9 | 9 28  | 2 1.07          | +26 59.8                      | 1.669                        | 2.555 | 13.0    | 18.4 |  |
| 10 8          | 1 50.89                       | + 5 28.6                     | 1.812    | 2.792 | 5.0     | 18.6 | 10 8  | 1 53.15         | +27 29.6                      | 1.625                        | 2.562 | 9.7     | 18.2 |  |
| 10 18         | 1 43.21                       | + 4 12.5                     | 1.789    | 2.782 | 2.2     | 18.4 | 10 18 | 1 43.73         | +27 37.4                      | 1.605                        | 2.570 | 7.0     | 18.1 |  |
| 10 28         | 1 35.31                       | + 3 0.4                      | 1.794    | 2.771 | 4.7     | 18.6 | 10 28 | 1 34.00         | +27 24.3                      | 1.611                        | 2.579 | 6.3     | 18.1 |  |
| 11 7          | 1 28.13                       | + 1 59.2                     | 1.828    | 2.760 | 8.6     | 18.8 | 11 7  | 1 25.24         | +26 55.2                      | 1.643                        | 2.588 | 8.3     | 18.2 |  |
| 11 17         | 1 22.45                       | + 1 13.8                     | 1.887    | 2.749 | 12.2    | 19.0 | 11 17 | 1 18.48         | +26 16.9                      | 1.700                        | 2.598 | 11.3    | 18.4 |  |
| 11 27         | 1 18.86                       | + 0 47.1                     | 1.967    | 2.739 | 15.2    | 19.2 | 11 27 | 1 14.41         | +25 37.6                      | 1.780                        | 2.608 | 14.3    | 18.6 |  |
| <b>514822</b> | 2007 <i>VX</i> <sub>225</sub> | 10 20.5 201°75' 0.5"/20.0 18 |          |       |         |      |       | <b>228769</b>   | 2002 <i>WP</i> <sub>21</sub>  | 10 20.5 301°79' 1.7"/19.3 18 |       |         |      |  |
| 9 18          | 2 5.04                        | +10 47.7                     | 2.032    | 2.894 | 12.2    | 22.1 | 9 18  | 2 4.27          | + 9 31.2                      | 1.387                        | 2.271 | 15.5    | 20.5 |  |
| 9 28          | 1 59.39                       | +10 19.6                     | 1.960    | 2.892 | 8.9     | 21.9 | 9 28  | 1 59.68         | + 8 46.5                      | 1.310                        | 2.253 | 11.3    | 20.2 |  |
| 10 8          | 1 51.96                       | + 9 42.8                     | 1.912    | 2.890 | 5.0     | 21.6 | 10 8  | 1 52.53         | + 7 49.1                      | 1.254                        | 2.235 | 6.4     | 19.9 |  |
| 10 18         | 1 43.43                       | + 9 0.7                      | 1.892    | 2.887 | 1.0     | 21.3 | 10 18 | 1 43.63         | + 6 44.8                      | 1.223                        | 2.218 | 1.8     | 19.6 |  |
| 10 28         | 1 34.71                       | + 8 18.1                     | 1.900    | 2.884 | 3.4     | 21.5 | 10 28 | 1 34.25         | + 5 41.7                      | 1.218                        | 2.200 | 5.2     | 19.8 |  |
| 11 7          | 1 26.75                       | + 7 40.3                     | 1.938    | 2.881 | 7.4     | 21.8 | 11 7  | 1 25.79         | + 4 48.7                      | 1.238                        | 2.183 | 10.4    | 20.0 |  |
| 11 17         | 1 20.32                       | + 7 11.8                     | 2.002    | 2.878 | 11.0    | 22.0 | 11 17 | 1 19.42         | + 4 12.9                      | 1.281                        | 2.166 | 15.2    | 20.3 |  |
| 11 27         | 1 15.99                       | + 6 55.7                     | 2.088    | 2.874 | 14.0    | 22.2 | 11 27 | 1 15.95         | + 3 58.4                      | 1.344                        | 2.150 | 19.3    | 20.5 |  |
| <b>40946</b>  | 1999 <i>TK</i> <sub>217</sub> | 10 20.5 60°08' 0.9"/21.2 18  |          |       |         |      |       | <b>474712</b>   | 2005 <i>GA</i> <sub>221</sub> | 10 20.5 243°72' 1.1"/21.6 18 |       |         |      |  |
| 9 18          | 2 6.77                        | +14 1.6                      | 1.603    | 2.466 | 14.9    | 19.3 | 9 18  | 2 3.25          | +17 28.5                      | 2.053                        | 2.898 | 12.8    | 21.6 |  |
| 9 28          | 2 0.96                        | +13 53.4                     | 1.545    | 2.475 | 10.9    | 19.1 | 9 28  | 1 58.21         | +16 40.6                      | 1.967                        | 2.887 | 9.6     | 21.4 |  |
| 10 8          | 1 52.95                       | +13 32.6                     | 1.509    | 2.484 | 6.5     | 18.9 | 10 8  | 1 51.36         | +15 36.8                      | 1.906                        | 2.876 | 5.8     | 21.2 |  |
| 10 18         | 1 43.63                       | +13 2.0                      | 1.498    | 2.493 | 1.8     | 18.6 | 10 18 | 1 43.36         | +14 20.4                      | 1.871                        | 2.865 | 1.9     | 20.9 |  |
| 10 28         | 1 34.18                       | +12 26.5                     | 1.515    | 2.502 | 3.5     | 18.7 | 10 28 | 1 35.11         | +12 57.0                      | 1.866                        | 2.853 | 2.9     | 20.9 |  |
| 11 7          | 1 25.79                       | +11 52.2                     | 1.560    | 2.511 | 8.0     | 19.0 | 11 7  | 1 27.57         | +11 33.9                      | 1.890                        | 2.841 | 7.0     | 21.2 |  |
| 11 17         | 1 19.38                       | +11 24.9                     | 1.629    | 2.521 | 12.1    | 19.3 | 11 17 | 1 21.53         | +10 18.1                      | 1.942                        | 2.828 | 10.7    | 21.4 |  |
| 11 27         | 1 15.56                       | +11 9.0                      | 1.720    | 2.530 | 15.5    | 19.5 | 11 27 | 1 17.59         | + 9 15.5                      | 2.017                        | 2.815 | 14.0    | 21.6 |  |
| <b>128049</b> | 2003 <i>MA</i> <sub>6</sub>   | 10 20.5 63°75' 7.1"/28.6 18  |          |       |         |      |       | <b>385271</b>   | 2001 <i>RT</i> <sub>124</sub> | 10 20.5 351°92' 3.3"/18.4 18 |       |         |      |  |
| 9 18          | 2 5.10                        | +34 40.4                     | 2.137    | 2.892 | 15.3    | 19.4 | 9 18  | 1 58.86         | + 6 47.2                      | 0.992                        | 1.904 | 17.7    | 19.6 |  |
| 9 28          | 1 59.57                       | +34 54.3                     | 2.071    | 2.907 | 12.9    | 19.3 | 9 28  | 1 56.21         | + 5 57.9                      | 0.936                        | 1.893 | 12.8    | 19.3 |  |
| 10 8          | 1 52.09                       | +34 44.3                     | 2.026    | 2.923 | 10.4    | 19.1 | 10 8  | 1 50.68         | + 4 57.8                      | 0.899                        | 1.885 | 7.3     | 19.0 |  |
| 10 18         | 1 43.46                       | +34 9.2                      | 2.004    | 2.938 | 8.1     | 19.0 | 10 18 | 1 43.25         | + 3 55.7                      | 0.884                        | 1.878 | 3.4     | 18.7 |  |
| 10 28         | 1 34.71                       | +33 11.2                     | 2.008    | 2.954 | 7.1     | 19.0 | 10 28 | 1 35.47         | + 3 2.4                       | 0.892                        | 1.873 | 6.9     | 18.9 |  |
| 11 7          | 1 26.90                       | +31 55.9                     | 2.039    | 2.970 | 7.9     | 19.1 | 11 7  | 1 28.94         | + 2 27.8                      | 0.921                        | 1.870 | 12.5    | 19.2 |  |
| 11 17         | 1 20.87                       | +30 31.0                     | 2.096    | 2.986 | 9.9     | 19.2 | 11 17 | 1 24.90         | + 2 17.6                      | 0.969                        | 1.868 | 17.6    | 19.5 |  |
| 11 27         | 1 17.16                       | +29 5.2                      | 2.179    | 3.001 | 12.2    | 19.4 | 11 27 | 1 24.13         | + 2 33.7                      | 1.035                        | 1.869 | 21.8    | 19.8 |  |
| <b>322634</b> | 1998 <i>SU</i> <sub>28</sub>  | 10 20.5 337°68' 0.7"/21.1 18 |          |       |         |      |       | <b>440865</b>   | 2006 <i>SF</i> <sub>378</sub> | 10 20.5 19°37' 7.0"/15.6 17  |       |         |      |  |
| 9 18          | 2 4.52                        | +13 4.5                      | 2.012    | 2.870 | 12.5    | 20.5 | 9 18  | 2 2.16          | - 3 12.4                      | 1.283                        | 2.184 | 15.3    | 20.3 |  |
| 9 28          | 1 59.10                       | +13 5.6                      | 1.938    | 2.865 | 9.2     | 20.2 | 9 28  | 1 57.80         | - 4 19.7                      | 1.247                        | 2.194 | 11.4    | 20.1 |  |
| 10 8          | 1 51.84                       | +12 57.5                     | 1.887    | 2.861 | 5.4     | 20.0 | 10 8  | 1 51.19         | - 5 21.9                      | 1.233                        | 2.205 | 8.1     | 19.9 |  |
| 10 18         | 1 43.42                       | +12 42.0                     | 1.863    | 2.857 | 1.5     | 19.7 | 10 18 | 1 43.31         | - 6 9.8                       | 1.242                        | 2.217 | 7.1     | 19.9 |  |
| 10 28         | 1 34.76                       | +12 22.5                     | 1.868    | 2.854 | 3.0     | 19.8 | 10 28 | 1 35.44         | - 6 35.9                      | 1.275                        | 2.230 | 9.4     | 20.1 |  |
| 11 7          | 1 26.83                       | +12 3.4                      | 1.901    | 2.851 | 7.0     | 20.1 | 11 7  | 1 28.80         | - 6 36.2                      | 1.332                        | 2.244 | 12.9    | 20.3 |  |
| 11 17         | 1 20.43                       | +11 48.7                     | 1.960    | 2.848 | 10.6    | 20.3 | 11 17 | 1 24.26         | - 6 10.7                      | 1.410                        | 2.259 | 16.3    | 20.6 |  |
| 11 27         | 1 16.18                       | +11 42.2                     | 2.043    | 2.845 | 13.7    | 20.5 | 11 27 | 1 22.35         | - 5 22.2                      | 1.506                        | 2.276 | 19.2    | 20.8 |  |
| <b>213205</b> | 2000 <i>TZ</i> <sub>22</sub>  | 10 20.5 342°23' 0.9"/19.9 17 |          |       |         |      |       | <b>401285</b>   | 2012 <i>DZ</i> <sub>26</sub>  | 10 20.5 114°20' 3.8"/24.1 18 |       |         |      |  |
| 9 18          | 2 3.55                        | +12 2.3                      | 1.149    | 2.040 | 17.5    | 20.2 | 9 18  | 2 6.93          | +23 10.9                      | 2.390                        | 3.198 | 12.4    | 20.6 |  |
| 9 28          | 1 59.36                       | +11 14                       |          |       |         |      |       |                 |                               |                              |       |         |      |  |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$           | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$          | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------|---------------|---------|------|---------------|-------------------------------|-----------------|----------|--------------|---------|------|
| <b>145026</b> | 2005 <i>EK</i> <sub>266</sub> | 10 20.5 49°41'  |          | 1.2°/19.6 18  |         |      | <b>399463</b> | 2002 <i>PB</i> <sub>184</sub> | 10 20.5 347°43' |          | 5.3°/15.3 18 |         |      |
| 9 18          | 2 4.53                        | +13 0.8         | 1.112    | 2.000         | 18.1    | 19.0 | 9 18          | 1 59.35                       | -1 1.6          | 1.777    | 2.669        | 12.2    | 20.0 |
| 9 28          | 1 59.67                       | +11 35.5        | 1.078    | 2.023         | 12.9    | 18.8 | 9 28          | 1 55.47                       | -2 19.4         | 1.718    | 2.662        | 9.0     | 19.8 |
| 10 8          | 1 52.27                       | +9 53.7         | 1.064    | 2.046         | 7.2     | 18.5 | 10 8          | 1 49.81                       | -3 37.3         | 1.682    | 2.655        | 6.2     | 19.6 |
| 10 18         | 1 43.52                       | +8 5.4          | 1.074    | 2.070         | 1.6     | 18.2 | 10 18         | 1 43.07                       | -4 47.9         | 1.673    | 2.649        | 5.5     | 19.6 |
| 10 28         | 1 34.93                       | +6 23.0         | 1.110    | 2.094         | 5.2     | 18.6 | 10 28         | 1 36.17                       | -5 43.6         | 1.691    | 2.644        | 7.6     | 19.7 |
| 11 7          | 1 27.88                       | +4 58.0         | 1.170    | 2.119         | 10.5    | 18.9 | 11 7          | 1 30.03                       | -6 18.9         | 1.734    | 2.640        | 10.8    | 19.9 |
| 11 17         | 1 23.30                       | +3 57.3         | 1.253    | 2.143         | 15.1    | 19.3 | 11 17         | 1 25.43                       | -6 31.5         | 1.800    | 2.636        | 13.9    | 20.1 |
| 11 27         | 1 21.65                       | +3 23.5         | 1.355    | 2.168         | 18.8    | 19.6 | 11 27         | 1 22.92                       | -6 21.3         | 1.885    | 2.633        | 16.6    | 20.3 |
| <b>438547</b> | 2007 <i>TN</i> <sub>224</sub> | 10 20.5 333°26' |          | 2.1°/19.1 18  |         |      | <b>325530</b> | 2009 <i>SN</i> <sub>19</sub>  | 10 20.5 9°95'   |          | 3.6°/16.9 18 |         |      |
| 9 18          | 2 4.01                        | +7 11.5         | 1.498    | 2.382         | 14.5    | 20.7 | 9 18          | 2 0.45                        | +3 14.4         | 1.939    | 2.823        | 11.7    | 19.9 |
| 9 28          | 1 59.22                       | +6 43.1         | 1.429    | 2.373         | 10.5    | 20.4 | 9 28          | 1 56.09                       | +2 3.0          | 1.881    | 2.824        | 8.4     | 19.7 |
| 10 8          | 1 52.12                       | +6 7.2          | 1.382    | 2.364         | 6.0     | 20.1 | 10 8          | 1 50.09                       | +0 48.2         | 1.847    | 2.825        | 5.1     | 19.5 |
| 10 18         | 1 43.54                       | +5 29.0         | 1.361    | 2.355         | 2.1     | 19.9 | 10 18         | 1 43.12                       | -0 23.6         | 1.841    | 2.827        | 3.6     | 19.4 |
| 10 28         | 1 34.65                       | +4 54.8         | 1.366    | 2.347         | 5.0     | 20.1 | 10 28         | 1 36.04                       | -1 25.7         | 1.863    | 2.829        | 5.8     | 19.6 |
| 11 7          | 1 26.69                       | +4 31.0         | 1.397    | 2.340         | 9.7     | 20.3 | 11 7          | 1 29.72                       | -2 12.5         | 1.912    | 2.831        | 9.1     | 19.8 |
| 11 17         | 1 20.68                       | +4 21.9         | 1.452    | 2.334         | 14.0    | 20.5 | 11 17         | 1 24.86                       | -2 40.7         | 1.985    | 2.834        | 12.3    | 20.0 |
| 11 27         | 1 17.31                       | +4 30.0         | 1.527    | 2.328         | 17.6    | 20.8 | 11 27         | 1 21.96                       | -2 49.2         | 2.080    | 2.837        | 15.0    | 20.2 |
| <b>206063</b> | 2002 <i>QH</i> <sub>116</sub> | 10 20.5 337°92' |          | 3.6°/17.5 18  |         |      | <b>94196</b>  | 2001 <i>BQ</i> <sub>14</sub>  | 10 20.5 255°65' |          | 2.1°/22.6 18 |         |      |
| 9 18          | 2 3.52                        | +3 32.5         | 1.717    | 2.601         | 13.0    | 20.2 | 9 18          | 2 3.58                        | +18 37.1        | 2.263    | 3.098        | 12.1    | 19.6 |
| 9 28          | 1 58.50                       | +2 35.0         | 1.656    | 2.599         | 9.4     | 20.0 | 9 28          | 1 58.32                       | +18 30.4        | 2.183    | 3.094        | 9.2     | 19.4 |
| 10 8          | 1 51.54                       | +1 33.6         | 1.619    | 2.598         | 5.6     | 19.8 | 10 8          | 1 51.38                       | +18 10.9        | 2.126    | 3.090        | 5.9     | 19.2 |
| 10 18         | 1 43.40                       | +0 34.7         | 1.608    | 2.596         | 3.6     | 19.6 | 10 18         | 1 43.40                       | +17 39.9        | 2.097    | 3.086        | 2.7     | 18.9 |
| 10 28         | 1 35.10                       | -0 14.7         | 1.625    | 2.595         | 6.0     | 19.8 | 10 28         | 1 35.19                       | +17 0.7         | 2.097    | 3.082        | 3.0     | 19.0 |
| 11 7          | 1 27.68                       | -0 48.8         | 1.668    | 2.593         | 9.8     | 20.0 | 11 7          | 1 27.64                       | +16 17.9        | 2.126    | 3.078        | 6.2     | 19.2 |
| 11 17         | 1 21.97                       | -1 4.4          | 1.735    | 2.592         | 13.3    | 20.2 | 11 17         | 1 21.49                       | +15 36.6        | 2.182    | 3.074        | 9.5     | 19.4 |
| 11 27         | 1 18.55                       | -1 0.2          | 1.823    | 2.591         | 16.4    | 20.5 | 11 27         | 1 17.29                       | +15 1.7         | 2.263    | 3.069        | 12.4    | 19.5 |
| <b>523159</b> | 2016 <i>TK</i> <sub>97</sub>  | 10 20.5 268°73' |          | 6.1°/16.9 18  |         |      | <b>396332</b> | 2014 <i>DA</i> <sub>55</sub>  | 10 20.5 152°25' |          | 1.2°/19.5 18 |         |      |
| 9 18          | 2 12.59                       | -6 24.3         | 1.786    | 2.654         | 13.4    | 21.0 | 9 18          | 2 5.36                        | +9 21.2         | 1.919    | 2.786        | 12.6    | 21.2 |
| 9 28          | 2 5.02                        | -6 35.6         | 1.720    | 2.648         | 10.2    | 20.7 | 9 28          | 1 59.67                       | +8 44.8         | 1.855    | 2.790        | 9.1     | 21.0 |
| 10 8          | 1 55.26                       | -6 39.2         | 1.679    | 2.642         | 7.3     | 20.6 | 10 8          | 1 52.15                       | +8 0.5          | 1.815    | 2.793        | 5.1     | 20.8 |
| 10 18         | 1 44.17                       | -6 29.8         | 1.665    | 2.636         | 6.1     | 20.5 | 10 18         | 1 43.55                       | +7 12.5         | 1.802    | 2.797        | 1.3     | 20.5 |
| 10 28         | 1 32.88                       | -6 3.5          | 1.679    | 2.630         | 7.9     | 20.6 | 10 28         | 1 34.81                       | +6 26.2         | 1.818    | 2.800        | 3.8     | 20.7 |
| 11 7          | 1 22.59                       | -5 18.8         | 1.721    | 2.624         | 11.0    | 20.8 | 11 7          | 1 26.92                       | +5 47.2         | 1.862    | 2.803        | 7.8     | 20.9 |
| 11 17         | 1 14.23                       | -4 16.6         | 1.787    | 2.618         | 14.2    | 21.0 | 11 17         | 1 20.65                       | +5 19.7         | 1.933    | 2.805        | 11.5    | 21.2 |
| 11 27         | 1 8.43                        | -2 59.1         | 1.875    | 2.612         | 17.1    | 21.2 | 11 27         | 1 16.55                       | +5 6.5          | 2.025    | 2.808        | 14.5    | 21.4 |
| <b>353093</b> | 2009 <i>DA</i> <sub>141</sub> | 10 20.5 263°34' |          | 3.8°/17.7 18  |         |      | <b>225451</b> | 2000 <i>ER</i> <sub>4</sub>   | 10 20.5 282°25' |          | 0.0°/20.5 18 |         |      |
| 9 18          | 2 8.24                        | +0 15.6         | 1.976    | 2.847         | 12.1    | 21.3 | 9 18          | 2 2.32                        | +12 20.7        | 2.274    | 3.132        | 11.3    | 21.1 |
| 9 28          | 2 1.85                        | -0 6.8          | 1.897    | 2.832         | 8.9     | 21.1 | 9 28          | 1 57.39                       | +11 56.3        | 2.190    | 3.119        | 8.2     | 20.8 |
| 10 8          | 1 53.48                       | -0 28.9         | 1.842    | 2.816         | 5.6     | 20.8 | 10 8          | 1 50.86                       | +11 22.7        | 2.131    | 3.107        | 4.7     | 20.6 |
| 10 18         | 1 43.82                       | -0 46.1         | 1.815    | 2.800         | 3.8     | 20.7 | 10 18         | 1 43.30                       | +10 42.8        | 2.099    | 3.094        | 1.0     | 20.3 |
| 10 28         | 1 33.85                       | -0 53.7         | 1.817    | 2.784         | 5.9     | 20.8 | 10 28         | 1 35.49                       | +10 0.7         | 2.096    | 3.082        | 2.9     | 20.4 |
| 11 7          | 1 24.60                       | -0 48.3         | 1.847    | 2.767         | 9.3     | 21.0 | 11 7          | 1 28.27                       | +9 21.0         | 2.123    | 3.069        | 6.6     | 20.7 |
| 11 17         | 1 16.95                       | -0 27.9         | 1.902    | 2.750         | 12.8    | 21.1 | 11 17         | 1 22.36                       | +8 48.2         | 2.176    | 3.056        | 10.0    | 20.9 |
| 11 27         | 1 11.56                       | +0 7.7          | 1.980    | 2.733         | 15.7    | 21.3 | 11 27         | 1 18.31                       | +8 26.0         | 2.253    | 3.044        | 12.9    | 21.0 |
| <b>298607</b> | 2003 <i>YZ</i> <sub>137</sub> | 10 20.5 348°44' |          | 10.2°/12.6 18 |         |      | <b>222058</b> | 1998 <i>WE</i> <sub>36</sub>  | 10 20.5 345°51' |          | 1.7°/19.5 18 |         |      |
| 9 18          | 2 2.69                        | -11 11.5        | 1.389    | 2.280         | 15.0    | 19.2 | 9 18          | 2 6.39                        | +8 8.2          | 1.321    | 2.207        | 16.0    | 20.3 |
| 9 28          | 1 58.26                       | -12 36.7        | 1.343    | 2.273         | 12.2    | 19.1 | 9 28          | 2 1.15                        | +7 46.1         | 1.259    | 2.203        | 11.6    | 20.0 |
| 10 8          | 1 51.54                       | -13 49.7        | 1.318    | 2.266         | 10.4    | 18.9 | 10 8          | 1 53.31                       | +7 15.3         | 1.218    | 2.199        | 6.6     | 19.7 |
| 10 18         | 1 43.42                       | -14 40.2        | 1.316    | 2.261         | 10.5    | 18.9 | 10 18         | 1 43.82                       | +6 40.7         | 1.202    | 2.197        | 1.9     | 19.4 |
| 10 28         | 1 35.14                       | -15 0.0         | 1.337    | 2.256         | 12.5    | 19.0 | 10 28         | 1 34.03                       | +6 9.2          | 1.211    | 2.194        | 5.1     | 19.6 |
| 11 7          | 1 27.95                       | -14 46.1        | 1.381    | 2.253         | 15.3    | 19.2 | 11 7          | 1 25.37                       | +5 47.4         | 1.246    | 2.192        | 10.2    | 19.9 |
| 11 17         | 1 22.80                       | -13 59.9        | 1.444    | 2.250         | 18.2    | 19.4 | 11 17         | 1 18.97                       | +5 40.2         | 1.303    | 2.191        | 14.8    | 20.2 |
| 11 27         | 1 20.30                       | -12 45.9        | 1.523    | 2.249         | 20.8    | 19.6 | 11 27         | 1 15.55                       | +5 50.4         | 1.380    | 2.190        | 18.7    | 20.5 |
| <b>94297</b>  | 2001 <i>DZ</i> <sub>102</sub> | 10 20.5 26°91'  |          | 1.0°/19.7 18  |         |      | <b>405346</b> | 2003 <i>UX</i> <sub>372</sub> | 10 20.5 52°61'  |          | 1.2°/21.8 18 |         |      |
| 9 18          | 2 2.03                        | +10 8.8         | 1.722    | 2.598         | 13.4    | 18.9 | 9 18          | 2 1.37                        | +17 52.8        | 1.979    | 2.828        | 13.1    | 20.7 |
| 9 28          | 1 57.37                       | +9 33.5         | 1.668    | 2.607         | 9.6     | 18.7 | 9 28          | 1 56.71                       | +17 3.1         | 1.921    | 2.843        | 9.7     | 20.5 |
| 10 8          | 1 50.86                       | +8 49.3         | 1.637    | 2.617         | 5.4     | 18.5 | 10 8          | 1 50.41                       | +15 58.6        | 1.887    | 2.858        | 5.9     | 20.3 |
| 10 18         | 1 43.27                       | +8 0.8          | 1.632    | 2.627         | 1.2     | 18.2 | 10 18         | 1 43.18                       | +14 43.1        | 1.880    | 2.873        | 2.0     | 20.1 |
| 10 28         | 1 35.61                       | +7 14.0         | 1.655    | 2.638         | 3.8     | 18.5 | 10 28         | 1 35.93                       | +13 22.8        | 1.902    | 2.888        | 2.8     | 20.2 |
| 11 7          | 1 28.85                       | +6 34.7         | 1.705    | 2.650         | 8.0     | 18.7 | 11 7          | 1 29.52                       | +12 4.7         | 1.952    | 2.904        | 6.6     | 20.5 |
| 11 17         | 1 23.79                       | +6 7.4          | 1.779    | 2.662         | 11.7    | 19.0 | 11 17         | 1 24.64                       | +10 55.1        | 2.029    | 2.920        | 10.1    | 20.7 |
| 11 27         | 1 20.95                       | +5 55.1         | 1.876    | 2.675         | 14.9    | 19.2 | 11 27         | 1 21.76                       | +9 59.0         | 2.130    | 2.935        | 13.1    | 20.9 |
| <b>126889</b> | 2002 <i>EW</i> <sub>101</sub> | 10 20.5 68°50'  |          | 0.6°/20.9 18  |         |      | <b>480620</b> | 2015 <i>MO</i> <sub>115</sub> | 10 20.5 101°85' |          | 8.2°/13.4 18 |         |      |
| 9 18          | 2 12.13                       | +11 29.4        | 1.559    | 2.420         | 15.3    | 18.7 | 9 18          | 2 5.62                        | -10 45.9        | 1.836    | 2.710        | 12.8    | 21.2 |
| 9 28          | 2 4.78                        | +11 48.6        | 1.509    | 2.439         | 11.2    | 18.5 | 9 28          | 1 59.78                       | -12 0.8         | 1.797    | 2.718        | 10.2    | 21.1 |
| 10 8          | 1 55.12                       | +11 58.4        | 1.482    | 2.458         | 6.5     | 18.3 | 10 8          | 1 52.16                       | -13 5.2         | 1.782    | 2.727        | 8.5     | 21.0 |
| 10 18         | 1 44.13                       | +12 0.6         | 1.482    | 2.477         | 1.6     | 18.0 | 10 18         | 1 43.54                       | -13 51.7        | 1.793    | 2.735        | 8.4     | 21.0 |
| 10 28         | 1 33.13                       | +11 58.4        | 1.510    | 2.496         | 3.6     | 18.2 | 10 28         | 1 34.92                       | -14 14.7        | 1.830    | 2.743        | 10.0    | 21.2 |
| 11 7          | 1 23.38                       | +11 56.5        | 1.566    | 2.516         | 8.2     | 18.5 | 11 7          | 1 27.28                       | -14 11.9        | 1.892    | 2.752        | 12.4    | 21.3 |
| 11 17         | 1 15.84                       | +11 58.9        | 1.647    | 2.535         | 12.3    | 18.8 | 11 17         | 1 21.35                       | -13 44.1        | 1.975    | 2.760        | 14.8    | 21.5 |
| 11 27         | 1 11.08                       | +12 9.2         | 1.751    | 2.554         | 15.6    | 19.1 | 11 27         | 1 17.63                       | -12 54.2        | 2.077    | 2.768        | 16.9    | 21.7 |
| <b>292700</b> | 2006 <i>UV</i> <sub>121</sub> | 10 20.5 107°15' |          | 0.7°/19.8 18  |         |      | <b>298146</b> | 2002 <i>SX</i> <sub>49</sub>  | 10 20.5 359°18' |          | 4.4°/16.8 18 |         |      |
| 9 18          | 2 3.77                        | +11 39.1        | 2.126    | 2.986         | 11.9    | 21.1 |               |                               |                 |          |              |         |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------------|----------|---------|------|---------------|-------------------------------|-----------------|----------------|----------|---------|------|
| <b>339183</b> | 2004 <i>TG</i> <sub>150</sub> |                 | 10 20.5 336°06 | 0°5/21.1 | 16      |      | <b>487593</b> | 2015 <i>KS</i> <sub>35</sub>  |                 | 10 20.5 11°71  | 4°1/17.2 | 18      |      |
| 9 18          | 1 59.08                       | +14 3.8         | 2.492          | 3.347    | 10.5    | 20.8 | 9 18          | 1 58.94                       | +6 42.0         | 1.155          | 2.059    | 16.3    | 19.9 |
| 9 28          | 1 54.94                       | +13 41.8        | 2.409          | 3.336    | 7.7     | 20.6 | 9 28          | 1 55.80                       | +5 4.0          | 1.108          | 2.063    | 11.6    | 19.6 |
| 10 8          | 1 49.41                       | +13 10.7        | 2.352          | 3.326    | 4.5     | 20.4 | 10 8          | 1 50.22                       | +3 15.7         | 1.084          | 2.067    | 6.7     | 19.4 |
| 10 18         | 1 43.01                       | +12 32.7        | 2.322          | 3.316    | 1.2     | 20.1 | 10 18         | 1 43.20                       | +1 28.6         | 1.083          | 2.073    | 4.1     | 19.2 |
| 10 28         | 1 36.41                       | +11 51.4        | 2.320          | 3.307    | 2.5     | 20.2 | 10 28         | 1 36.06                       | -0 4.8          | 1.106          | 2.080    | 7.4     | 19.4 |
| 11 7          | 1 30.35                       | +11 11.1        | 2.348          | 3.298    | 5.8     | 20.4 | 11 7          | 1 30.13                       | -1 14.4         | 1.153          | 2.089    | 12.1    | 19.7 |
| 11 17         | 1 25.42                       | +10 35.9        | 2.403          | 3.289    | 8.9     | 20.6 | 11 17         | 1 26.38                       | -1 54.8         | 1.221          | 2.098    | 16.4    | 20.0 |
| 11 27         | 1 22.13                       | +10 9.4         | 2.482          | 3.281    | 11.6    | 20.8 | 11 27         | 1 25.38                       | -2 5.3          | 1.307          | 2.109    | 20.0    | 20.3 |
| <b>240640</b> | 2005 <i>AM</i> <sub>47</sub>  |                 | 10 20.5 140°95 | 4°7/25.4 | 18      |      | <b>509605</b> | 2008 <i>ED</i> <sub>70</sub>  |                 | 10 20.5 259°28 | 9°8/10.1 | 18      |      |
| 9 18          | 2 6.43                        | +27 24.7        | 2.139          | 2.934    | 14.1    | 20.8 | 9 18          | 2 3.67                        | -8 1.9          | 1.518          | 2.407    | 14.1    | 21.4 |
| 9 28          | 2 0.46                        | +27 16.9        | 2.066          | 2.943    | 11.3    | 20.6 | 9 28          | 1 58.96                       | -10 47.1        | 1.462          | 2.393    | 11.4    | 21.2 |
| 10 8          | 1 52.62                       | +26 48.9        | 2.016          | 2.952    | 8.2     | 20.4 | 10 8          | 1 52.00                       | -13 28.4        | 1.432          | 2.379    | 9.8     | 21.1 |
| 10 18         | 1 43.66                       | +26 1.2         | 1.992          | 2.960    | 5.5     | 20.3 | 10 18         | 1 43.58                       | -15 51.5        | 1.427          | 2.365    | 10.5    | 21.1 |
| 10 28         | 1 34.57                       | +24 56.8        | 1.995          | 2.968    | 4.8     | 20.3 | 10 28         | 1 34.86                       | -17 43.5        | 1.449          | 2.351    | 12.9    | 21.2 |
| 11 7          | 1 26.35                       | +23 42.1        | 2.028          | 2.975    | 6.8     | 20.4 | 11 7          | 1 27.06                       | -18 56.9        | 1.493          | 2.336    | 16.0    | 21.4 |
| 11 17         | 1 19.79                       | +22 24.3        | 2.088          | 2.982    | 9.7     | 20.6 | 11 17         | 1 21.16                       | -19 30.3        | 1.556          | 2.321    | 19.0    | 21.6 |
| 11 27         | 1 15.47                       | +21 11.0        | 2.173          | 2.989    | 12.5    | 20.8 | 11 27         | 1 17.86                       | -19 26.5        | 1.635          | 2.306    | 21.5    | 21.7 |
| <b>331601</b> | 2001 <i>WL</i> <sub>17</sub>  |                 | 10 20.5 18°21  | 1°2/21.3 | 18      |      | <b>470998</b> | 2009 <i>SX</i> <sub>142</sub> |                 | 10 20.5 43°40  | 0°4/20.8 | 18      |      |
| 9 18          | 2 2.48                        | +14 48.9        | 1.017          | 1.909    | 19.1    | 19.7 | 9 18          | 2 7.13                        | +13 10.5        | 1.158          | 2.040    | 18.0    | 20.7 |
| 9 28          | 1 58.69                       | +14 36.0        | 0.972          | 1.917    | 14.1    | 19.5 | 9 28          | 2 1.67                        | +12 51.0        | 1.117          | 2.057    | 13.1    | 20.5 |
| 10 8          | 1 51.99                       | +14 4.1         | 0.947          | 1.927    | 8.4     | 19.2 | 10 8          | 1 53.53                       | +12 16.3        | 1.096          | 2.075    | 7.6     | 20.2 |
| 10 18         | 1 43.55                       | +13 17.7        | 0.943          | 1.938    | 2.4     | 18.9 | 10 18         | 1 43.87                       | +11 31.3        | 1.098          | 2.094    | 1.7     | 19.9 |
| 10 28         | 1 35.00                       | +12 25.2        | 0.963          | 1.951    | 4.3     | 19.1 | 10 28         | 1 34.24                       | +10 43.6        | 1.126          | 2.113    | 4.2     | 20.2 |
| 11 7          | 1 27.93                       | +11 36.4        | 1.006          | 1.966    | 10.0    | 19.4 | 11 7          | 1 26.12                       | +10 1.7         | 1.178          | 2.133    | 9.6     | 20.5 |
| 11 17         | 1 23.49                       | +10 59.8        | 1.070          | 1.981    | 15.1    | 19.8 | 11 17         | 1 20.54                       | +9 32.3         | 1.253          | 2.153    | 14.3    | 20.9 |
| 11 27         | 1 22.29                       | +10 40.9        | 1.153          | 1.998    | 19.3    | 20.1 | 11 27         | 1 18.07                       | +9 19.6         | 1.348          | 2.173    | 18.2    | 21.2 |
| <b>454048</b> | 2012 <i>GE</i> <sub>24</sub>  |                 | 10 20.5 220°92 | 2°5/17.5 | 18      |      | <b>425539</b> | 2010 <i>RF</i> <sub>11</sub>  |                 | 10 20.5 56°84  | 4°5/23.2 | 16      |      |
| 9 18          | 2 0.84                        | +4 37.3         | 2.546          | 3.417    | 9.7     | 21.7 | 9 18          | 2 10.97                       | +20 30.8        | 1.189          | 2.045    | 19.5    | 21.2 |
| 9 28          | 1 56.09                       | +3 35.4         | 2.474          | 3.412    | 7.0     | 21.5 | 9 28          | 2 4.72                        | +20 58.2        | 1.139          | 2.058    | 15.0    | 21.0 |
| 10 8          | 1 50.02                       | +2 29.6         | 2.428          | 3.406    | 4.1     | 21.4 | 10 8          | 1 55.43                       | +21 3.3         | 1.108          | 2.072    | 10.0    | 20.8 |
| 10 18         | 1 43.13                       | +1 24.3         | 2.411          | 3.399    | 2.5     | 21.2 | 10 18         | 1 44.29                       | +20 45.7        | 1.100          | 2.086    | 5.5     | 20.6 |
| 10 28         | 1 36.11                       | +0 24.7         | 2.424          | 3.393    | 4.4     | 21.4 | 10 28         | 1 32.99                       | +20 9.7         | 1.117          | 2.100    | 5.3     | 20.6 |
| 11 7          | 1 29.65                       | -0 24.6         | 2.466          | 3.386    | 7.3     | 21.5 | 11 7          | 1 23.25                       | +19 23.9        | 1.159          | 2.115    | 9.5     | 20.9 |
| 11 17         | 1 24.32                       | -1 0.4          | 2.535          | 3.379    | 10.1    | 21.7 | 11 17         | 1 16.29                       | +18 38.2        | 1.224          | 2.130    | 14.1    | 21.2 |
| 11 27         | 1 20.58                       | -1 20.9         | 2.626          | 3.372    | 12.5    | 21.9 | 11 27         | 1 12.80                       | +18 1.2         | 1.309          | 2.145    | 18.0    | 21.5 |
| <b>423302</b> | 2005 <i>EL</i> <sub>142</sub> |                 | 10 20.5 162°95 | 0°1/20.6 | 16      |      | <b>40928</b>  | 1999 <i>TB</i> <sub>187</sub> |                 | 10 20.5 35°11  | 6°8/26.5 | 18      |      |
| 9 18          | 2 10.67                       | +12 4.4         | 1.919          | 2.770    | 13.3    | 22.5 | 9 18          | 2 6.94                        | +29 34.5        | 1.867          | 2.659    | 16.0    | 18.5 |
| 9 28          | 2 3.53                        | +11 48.4        | 1.851          | 2.777    | 9.7     | 22.3 | 9 28          | 2 1.21                        | +30 16.6        | 1.801          | 2.668    | 13.2    | 18.4 |
| 10 8          | 1 54.39                       | +11 22.7        | 1.809          | 2.784    | 5.6     | 22.1 | 10 8          | 1 53.23                       | +30 36.8        | 1.756          | 2.678    | 10.2    | 18.2 |
| 10 18         | 1 44.04                       | +10 50.1        | 1.794          | 2.789    | 1.2     | 21.8 | 10 18         | 1 43.84                       | +30 33.3        | 1.734          | 2.688    | 7.7     | 18.1 |
| 10 28         | 1 33.54                       | +10 15.0        | 1.809          | 2.794    | 3.3     | 21.9 | 10 28         | 1 34.19                       | +30 7.2         | 1.739          | 2.698    | 6.9     | 18.1 |
| 11 7          | 1 23.96                       | +9 42.7         | 1.853          | 2.798    | 7.5     | 22.2 | 11 7          | 1 25.49                       | +29 23.5        | 1.770          | 2.709    | 8.3     | 18.2 |
| 11 17         | 1 16.19                       | +9 17.9         | 1.924          | 2.801    | 11.3    | 22.5 | 11 17         | 1 18.72                       | +28 29.6        | 1.827          | 2.720    | 10.9    | 18.4 |
| 11 27         | 1 10.81                       | +9 4.3          | 2.018          | 2.803    | 14.5    | 22.7 | 11 27         | 1 14.56                       | +27 33.9        | 1.907          | 2.732    | 13.6    | 18.6 |
| <b>360734</b> | 2004 <i>TL</i> <sub>318</sub> |                 | 10 20.5 31°71  | 1°4/21.2 | 17      |      | <b>20762</b>  | 2000 <i>EE</i> <sub>36</sub>  |                 | 10 20.5 317°36 | 8°1/13.3 | 18      |      |
| 9 18          | 2 8.23                        | +13 24.9        | 0.853          | 1.751    | 21.3    | 19.7 | 9 18          | 2 4.00                        | -11 42.6        | 1.949          | 2.822    | 12.2    | 16.3 |
| 9 28          | 2 3.08                        | +13 40.2        | 0.820          | 1.767    | 15.6    | 19.5 | 9 28          | 1 58.78                       | -12 38.4        | 1.886          | 2.805    | 9.9     | 16.2 |
| 10 8          | 1 54.54                       | +13 37.7        | 0.805          | 1.785    | 9.2     | 19.2 | 10 8          | 1 51.72                       | -13 24.6        | 1.846          | 2.789    | 8.3     | 16.0 |
| 10 18         | 1 44.07                       | +13 20.4        | 0.809          | 1.804    | 2.6     | 18.9 | 10 18         | 1 43.52                       | -13 54.2        | 1.832          | 2.773    | 8.3     | 16.0 |
| 10 28         | 1 33.66                       | +12 55.7        | 0.837          | 1.825    | 4.8     | 19.1 | 10 28         | 1 35.11                       | -14 1.6         | 1.843          | 2.758    | 9.9     | 16.1 |
| 11 7          | 1 25.22                       | +12 32.6        | 0.886          | 1.846    | 10.9    | 19.6 | 11 7          | 1 27.45                       | -13 44.3        | 1.879          | 2.743    | 12.3    | 16.2 |
| 11 17         | 1 19.97                       | +12 18.7        | 0.955          | 1.869    | 16.2    | 19.9 | 11 17         | 1 21.35                       | -13 2.5         | 1.938          | 2.728    | 14.9    | 16.3 |
| 11 27         | 1 18.46                       | +12 19.4        | 1.043          | 1.893    | 20.5    | 20.3 | 11 27         | 1 17.39                       | -11 58.7        | 2.015          | 2.714    | 17.1    | 16.5 |
| <b>441090</b> | 2007 <i>RA</i> <sub>216</sub> |                 | 10 20.5 316°26 | 2°8/17.9 | 18      |      | <b>172255</b> | 2002 <i>SQ</i> <sub>9</sub>   |                 | 10 20.5 30°37  | 0°2/20.7 | 18      |      |
| 9 18          | 1 59.57                       | +9 22.9         | 1.477          | 2.365    | 14.4    | 20.7 | 9 18          | 2 5.99                        | +12 0.4         | 1.693          | 2.559    | 14.1    | 20.1 |
| 9 28          | 1 56.13                       | +7 43.3         | 1.396          | 2.342    | 10.4    | 20.4 | 9 28          | 2 0.39                        | +11 51.1        | 1.629          | 2.562    | 10.3    | 19.9 |
| 10 8          | 1 50.46                       | +5 47.2         | 1.338          | 2.320    | 5.9     | 20.1 | 10 8          | 1 52.70                       | +11 31.6        | 1.588          | 2.565    | 5.9     | 19.6 |
| 10 18         | 1 43.27                       | +3 43.0         | 1.306          | 2.299    | 2.8     | 19.9 | 10 18         | 1 43.73                       | +11 4.9         | 1.574          | 2.569    | 1.3     | 19.3 |
| 10 28         | 1 35.69                       | +1 42.5         | 1.301          | 2.277    | 6.1     | 20.0 | 10 28         | 1 34.57                       | +10 35.5        | 1.587          | 2.573    | 3.5     | 19.5 |
| 11 7          | 1 28.92                       | -0 2.4          | 1.322          | 2.257    | 10.9    | 20.3 | 11 7          | 1 26.35                       | +10 9.1         | 1.627          | 2.577    | 7.9     | 19.8 |
| 11 17         | 1 23.98                       | -1 22.9         | 1.367          | 2.237    | 15.4    | 20.5 | 11 17         | 1 19.97                       | +9 50.4         | 1.693          | 2.581    | 11.9    | 20.0 |
| 11 27         | 1 21.60                       | -2 14.5         | 1.431          | 2.218    | 19.2    | 20.7 | 11 27         | 1 16.05                       | +9 43.2         | 1.781          | 2.586    | 15.3    | 20.3 |
| <b>333777</b> | 2011 <i>EL</i> <sub>82</sub>  |                 | 10 20.5 52°07  | 3°6/17.9 | 18      |      | <b>482597</b> | 2012 <i>XB</i> <sub>130</sub> |                 | 10 20.5 334°17 | 3°2/22.5 | 16      |      |
| 9 18          | 2 5.23                        | +5 36.3         | 1.292          | 2.184    | 15.8    | 19.6 | 9 18          | 2 1.90                        | +17 55.3        | 1.219          | 2.093    | 17.8    | 21.1 |
| 9 28          | 1 59.98                       | +4 27.2         | 1.254          | 2.201    | 11.3    | 19.4 | 9 28          | 1 58.44                       | +18 7.8         | 1.139          | 2.072    | 13.7    | 20.8 |
| 10 8          | 1 52.43                       | +3 12.5         | 1.238          | 2.219    | 6.5     | 19.2 | 10 8          | 1 52.10                       | +18 0.8         | 1.080          | 2.052    | 8.9     | 20.4 |
| 10 18         | 1 43.62                       | +2 0.6          | 1.247          | 2.238    | 3.6     | 19.1 | 10 18         | 1 43.68                       | +17 34.7        | 1.042          | 2.033    | 4.1     | 20.1 |
| 10 28         | 1 34.88                       | +1 0.6          | 1.282          | 2.256    | 6.5     | 19.3 | 10 28         | 1 34.58                       | +16 53.7        | 1.028          | 2.015    | 4.6     | 20.1 |
| 11 7          | 1 27.47                       | +0 19.5         | 1.341          | 2.275    | 10.9    | 19.6 | 11 7          | 1 26.44                       | +16 5.7         | 1.038          | 1.999    | 9.7     | 20.3 |
| 11 17         | 1 22.27                       | +0 0.7          | 1.424          | 2.295    | 14.9    | 19.9 | 11 17         | 1 20.65                       | +15 20.4        | 1.070          | 1.984    | 14.9    | 20.6 |
| 11 27         | 1 19.79                       | +0 4.6          | 1.525          | 2.314    | 18.2    | 20.2 | 11 27         | 1 18.16                       | +14 46.5        | 1.121          | 1.970    | 19.4    | 20.8 |
| <b>227327</b> | 2005 <i>TT</i> <sub>161</sub> |                 | 10 20.5 260°45 | 1°7/21.7 | 18      |      | <b>296701</b> | 2009 <i>SS</i> <sub>278</sub> |                 | 10 20.5 326°81 | 0°1/20.4 | 18      |      |



EPHEMERIDES

10 20.5

10 20.5

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$     | $\beta$    | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$  | $r$     | $\beta$   | $V$  |
|---------------|-------------------------------|-----------------|----------|---------|------------|------|---------------|-------------------------------|-----------------|-----------|---------|-----------|------|
| <b>285014</b> | 2011 <i>BF</i> <sub>94</sub>  |                 | 10 20.5  | 13°36'  | 3°0'/23.3  | 18   | <b>436625</b> | 2011 <i>MX</i> <sub>3</sub>   |                 | 10 20.5   | 70°03'  | 7°1'/14.4 | 17   |
| 9 18          | 2 3.36                        | +20 40.3        | 2.001    | 2.835   | 13.5       | 20.8 | 9 18          | 2 5.60                        | - 4 50.5        | 1.605     | 2.490   | 13.7      | 20.8 |
| 9 28          | 1 58.35                       | +20 40.4        | 1.929    | 2.837   | 10.4       | 20.7 | 9 28          | 1 59.78                       | - 6 32.5        | 1.583     | 2.519   | 10.3      | 20.7 |
| 10 8          | 1 51.49                       | +20 25.1        | 1.879    | 2.839   | 6.9        | 20.5 | 10 8          | 1 52.15                       | - 8 7.2         | 1.585     | 2.547   | 7.7       | 20.6 |
| 10 18         | 1 43.49                       | +19 55.4        | 1.856    | 2.841   | 3.7        | 20.3 | 10 18         | 1 43.60                       | - 9 25.6        | 1.613     | 2.575   | 7.3       | 20.6 |
| 10 28         | 1 35.28                       | +19 14.5        | 1.861    | 2.844   | 3.6        | 20.3 | 10 28         | 1 35.24                       | -10 20.4        | 1.668     | 2.603   | 9.3       | 20.8 |
| 11 7          | 1 27.84                       | +18 27.9        | 1.893    | 2.847   | 6.7        | 20.5 | 11 7          | 1 28.05                       | -10 48.4        | 1.748     | 2.631   | 12.1      | 21.0 |
| 11 17         | 1 21.99                       | +17 41.6        | 1.952    | 2.850   | 10.1       | 20.7 | 11 17         | 1 22.74                       | -10 49.7        | 1.850     | 2.658   | 14.8      | 21.3 |
| 11 27         | 1 18.31                       | +17 1.4         | 2.035    | 2.853   | 13.1       | 20.9 | 11 27         | 1 19.73                       | -10 27.2        | 1.970     | 2.685   | 17.0      | 21.5 |
| <b>308291</b> | 2005 <i>JD</i> <sub>56</sub>  |                 | 10 20.5  | 103°59' | 5°5'/15.1  | 18   | <b>241225</b> | 2007 <i>TE</i> <sub>111</sub> |                 | 10 20.5   | 137°40' | 5°3'/25.2 | 18   |
| 9 18          | 2 3.16                        | - 2 23.1        | 1.929    | 2.811   | 11.9       | 21.2 | 9 18          | 2 9.42                        | +26 46.0        | 2.065     | 2.860   | 14.5      | 20.6 |
| 9 28          | 1 57.99                       | - 3 45.6        | 1.882    | 2.820   | 8.8        | 21.0 | 9 28          | 2 2.78                        | +27 11.8        | 1.993     | 2.868   | 11.7      | 20.4 |
| 10 8          | 1 51.17                       | - 5 6.1         | 1.860    | 2.828   | 6.2        | 20.9 | 10 8          | 1 54.07                       | +27 18.7        | 1.943     | 2.876   | 8.7       | 20.2 |
| 10 18         | 1 43.41                       | - 6 17.2        | 1.866    | 2.837   | 5.6        | 20.9 | 10 18         | 1 44.05                       | +27 5.8         | 1.919     | 2.884   | 6.0       | 20.1 |
| 10 28         | 1 35.61                       | - 7 12.3        | 1.900    | 2.845   | 7.5        | 21.0 | 10 28         | 1 33.80                       | +26 34.5        | 1.923     | 2.891   | 5.4       | 20.1 |
| 11 7          | 1 28.65                       | - 7 46.9        | 1.960    | 2.854   | 10.4       | 21.2 | 11 7          | 1 24.42                       | +25 50.0        | 1.955     | 2.898   | 7.3       | 20.2 |
| 11 17         | 1 23.24                       | - 7 59.5        | 2.043    | 2.862   | 13.2       | 21.4 | 11 17         | 1 16.83                       | +24 58.8        | 2.014     | 2.905   | 10.2      | 20.4 |
| 11 27         | 1 19.86                       | - 7 50.7        | 2.147    | 2.870   | 15.5       | 21.6 | 11 27         | 1 11.67                       | +24 8.3         | 2.097     | 2.911   | 13.0      | 20.6 |
| <b>386820</b> | 2010 <i>GK</i> <sub>33</sub>  |                 | 10 20.5  | 193°72' | 2°9'/17.6  | 18   | <b>357440</b> | 2004 <i>BE</i> <sub>89</sub>  |                 | 10 20.5   | 303°97' | 4°6'/16.5 | 17   |
| 9 18          | 2 4.27                        | + 4 32.9        | 2.143    | 3.014   | 11.3       | 22.2 | 9 18          | 2 3.47                        | + 2 43.1        | 1.671     | 2.556   | 13.2      | 21.1 |
| 9 28          | 1 58.77                       | + 3 28.3        | 2.075    | 3.012   | 8.1        | 22.0 | 9 28          | 1 58.95                       | + 1 25.7        | 1.574     | 2.517   | 9.7       | 20.8 |
| 10 8          | 1 51.63                       | + 2 19.1        | 2.033    | 3.010   | 4.8        | 21.8 | 10 8          | 1 52.15                       | + 0 0.4         | 1.500     | 2.478   | 6.2       | 20.5 |
| 10 18         | 1 43.52                       | + 1 10.9        | 2.019    | 3.007   | 2.9        | 21.7 | 10 18         | 1 43.71                       | - 1 25.4        | 1.453     | 2.438   | 4.6       | 20.3 |
| 10 28         | 1 35.26                       | + 0 9.8         | 2.035    | 3.004   | 5.1        | 21.9 | 10 28         | 1 34.64                       | - 2 42.2        | 1.434     | 2.398   | 7.4       | 20.4 |
| 11 7          | 1 27.71                       | - 0 38.9        | 2.079    | 3.000   | 8.4        | 22.1 | 11 7          | 1 26.14                       | - 3 41.5        | 1.440     | 2.358   | 11.6      | 20.6 |
| 11 17         | 1 21.58                       | - 1 11.6        | 2.149    | 2.996   | 11.6       | 22.3 | 11 17         | 1 19.31                       | - 4 17.3        | 1.469     | 2.318   | 15.8      | 20.7 |
| 11 27         | 1 17.40                       | - 1 26.5        | 2.241    | 2.991   | 14.2       | 22.4 | 11 27         | 1 14.97                       | - 4 26.7        | 1.518     | 2.278   | 19.5      | 20.9 |
| <b>285868</b> | 2001 <i>KM</i> <sub>15</sub>  |                 | 10 20.5  | 73°60'  | 7°5'/16.3  | 16   | <b>432705</b> | 2011 <i>CL</i> <sub>8</sub>   |                 | 10 20.5   | 159°06' | 1°8'/18.9 | 16   |
| 9 18          | 2 13.15                       | - 6 41.5        | 1.398    | 2.276   | 15.7       | 20.4 | 9 18          | 2 7.23                        | + 8 0.8         | 1.878     | 2.745   | 12.8      | 21.9 |
| 9 28          | 2 5.33                        | - 7 27.4        | 1.373    | 2.305   | 11.9       | 20.2 | 9 28          | 2 1.05                        | + 7 13.8        | 1.816     | 2.751   | 9.2       | 21.7 |
| 10 8          | 1 55.30                       | - 8 3.1         | 1.371    | 2.333   | 8.6        | 20.1 | 10 8          | 1 52.99                       | + 6 19.6        | 1.778     | 2.757   | 5.2       | 21.5 |
| 10 18         | 1 44.22                       | - 8 21.6        | 1.394    | 2.361   | 7.6        | 20.1 | 10 18         | 1 43.82                       | + 5 23.1        | 1.769     | 2.762   | 1.9       | 21.3 |
| 10 28         | 1 33.46                       | - 8 17.9        | 1.444    | 2.389   | 9.4        | 20.3 | 10 28         | 1 34.54                       | + 4 30.3        | 1.788     | 2.767   | 4.4       | 21.5 |
| 11 7          | 1 24.25                       | - 7 50.7        | 1.518    | 2.416   | 12.5       | 20.6 | 11 7          | 1 26.16                       | + 3 47.2        | 1.836     | 2.771   | 8.3       | 21.7 |
| 11 17         | 1 17.42                       | - 7 2.1         | 1.615    | 2.443   | 15.6       | 20.8 | 11 17         | 1 19.48                       | + 3 17.9        | 1.909     | 2.774   | 11.9      | 21.9 |
| 11 27         | 1 13.40                       | - 5 55.7        | 1.731    | 2.470   | 18.2       | 21.1 | 11 27         | 1 15.07                       | + 3 4.8         | 2.005     | 2.777   | 15.0      | 22.2 |
| <b>515792</b> | 2015 <i>LC</i> <sub>22</sub>  |                 | 10 20.5  | 29°08'  | 10°2'/14.9 | 18   | <b>514222</b> | 2015 <i>OA</i> <sub>46</sub>  |                 | 10 20.5   | 117°07' | 5°0'/24.8 | 18   |
| 9 18          | 2 5.43                        | - 9 33.6        | 1.089    | 1.990   | 17.4       | 19.2 | 9 18          | 2 9.59                        | +25 35.9        | 1.993     | 2.796   | 14.7      | 21.6 |
| 9 28          | 2 0.18                        | -10 42.8        | 1.076    | 2.015   | 13.6       | 19.1 | 9 28          | 2 2.90                        | +25 59.0        | 1.927     | 2.809   | 11.7      | 21.4 |
| 10 8          | 1 52.51                       | -11 35.2        | 1.083    | 2.042   | 10.8       | 19.0 | 10 8          | 1 54.12                       | +26 3.4         | 1.882     | 2.821   | 8.5       | 21.2 |
| 10 18         | 1 43.66                       | -12 1.6         | 1.111    | 2.070   | 10.3       | 19.1 | 10 18         | 1 44.06                       | +25 48.4        | 1.863     | 2.833   | 5.7       | 21.1 |
| 10 28         | 1 35.14                       | -11 56.3        | 1.162    | 2.099   | 12.2       | 19.3 | 10 28         | 1 33.82                       | +25 16.1        | 1.873     | 2.845   | 5.1       | 21.1 |
| 11 7          | 1 28.25                       | -11 19.4        | 1.235    | 2.129   | 15.1       | 19.5 | 11 7          | 1 24.52                       | +24 31.6        | 1.910     | 2.856   | 7.3       | 21.2 |
| 11 17         | 1 23.81                       | -10 15.2        | 1.327    | 2.161   | 18.1       | 19.8 | 11 17         | 1 17.07                       | +23 41.9        | 1.975     | 2.867   | 10.3      | 21.4 |
| 11 27         | 1 22.22                       | - 8 49.6        | 1.436    | 2.193   | 20.6       | 20.1 | 11 27         | 1 12.07                       | +22 53.9        | 2.063     | 2.877   | 13.1      | 21.6 |
| <b>48812</b>  | 1997 <i>WL</i>                |                 | 10 20.5  | 150°43' | 2°4'/18.5  | 18   | <b>314364</b> | 2005 <i>UA</i> <sub>39</sub>  |                 | 10 20.5   | 79°09'  | 0°7'/19.9 | 18   |
| 9 18          | 2 5.50                        | + 4 40.9        | 2.012    | 2.884   | 11.9       | 18.2 | 9 18          | 2 3.38                        | +10 30.2        | 2.053     | 2.918   | 12.0      | 21.2 |
| 9 28          | 1 59.72                       | + 4 11.7        | 1.948    | 2.886   | 8.6        | 18.0 | 9 28          | 1 58.15                       | + 9 55.8        | 1.993     | 2.927   | 8.6       | 21.0 |
| 10 8          | 1 52.20                       | + 3 39.3        | 1.909    | 2.888   | 5.0        | 17.8 | 10 8          | 1 51.28                       | + 9 13.3        | 1.958     | 2.936   | 4.9       | 20.8 |
| 10 18         | 1 43.64                       | + 3 7.6         | 1.898    | 2.889   | 2.4        | 17.7 | 10 18         | 1 43.47                       | + 8 26.6        | 1.950     | 2.945   | 1.0       | 20.6 |
| 10 28         | 1 34.95                       | + 2 41.7        | 1.916    | 2.891   | 4.6        | 17.8 | 10 28         | 1 35.57                       | + 7 40.6        | 1.971     | 2.954   | 3.4       | 20.8 |
| 11 7          | 1 27.05                       | + 2 25.5        | 1.961    | 2.893   | 8.2        | 18.0 | 11 7          | 1 28.46                       | + 7 0.6         | 2.020     | 2.964   | 7.1       | 21.0 |
| 11 17         | 1 20.69                       | + 2 21.8        | 2.033    | 2.894   | 11.5       | 18.3 | 11 17         | 1 22.83                       | + 6 30.4        | 2.096     | 2.973   | 10.5      | 21.2 |
| 11 27         | 1 16.41                       | + 2 32.1        | 2.127    | 2.895   | 14.3       | 18.5 | 11 27         | 1 19.19                       | + 6 13.2        | 2.195     | 2.982   | 13.4      | 21.5 |
| <b>367789</b> | 2011 <i>AG</i> <sub>5</sub>   |                 | 10 20.5  | 213°20' | 3°6'/18.6  | 13 C | <b>478702</b> | 2012 <i>UL</i> <sub>36</sub>  |                 | 10 20.5   | 287°33' | 1°0'/21.5 | 18   |
| 9 18          | 2 23.47                       | + 8 10.0        | 1.109    | 1.978   | 19.6       | 24.5 | 9 18          | 2 2.54                        | +17 36.3        | 1.681     | 2.537   | 14.6      | 21.3 |
| 9 28          | 2 14.51                       | + 6 48.4        | 1.033    | 1.969   | 14.4       | 24.2 | 9 28          | 1 58.07                       | +16 36.9        | 1.600     | 2.526   | 10.9      | 21.0 |
| 10 8          | 2 1.53                        | + 5 8.8         | 0.978    | 1.956   | 8.4        | 23.8 | 10 8          | 1 51.49                       | +15 17.9        | 1.542     | 2.515   | 6.6       | 20.7 |
| 10 18         | 1 45.67                       | + 3 20.4        | 0.948    | 1.941   | 3.7        | 23.5 | 10 18         | 1 43.54                       | +13 43.4        | 1.510     | 2.504   | 2.0       | 20.4 |
| 10 28         | 1 28.97                       | + 1 37.6        | 0.946    | 1.922   | 7.8        | 23.7 | 10 28         | 1 35.30                       | +12 1.0         | 1.506     | 2.493   | 3.4       | 20.5 |
| 11 7          | 1 13.75                       | + 0 15.0        | 0.970    | 1.901   | 14.4       | 23.9 | 11 7          | 1 27.91                       | +10 20.6        | 1.530     | 2.482   | 8.1       | 20.8 |
| 11 17         | 1 1.83                        | - 0 38.1        | 1.017    | 1.877   | 20.3       | 24.2 | 11 17         | 1 22.29                       | + 8 51.3        | 1.580     | 2.472   | 12.4      | 21.0 |
| 11 27         | 0 54.25                       | - 0 58.1        | 1.080    | 1.849   | 25.2       | 24.5 | 11 27         | 1 19.11                       | + 7 40.0        | 1.652     | 2.461   | 16.1      | 21.2 |
| <b>361036</b> | 2005 <i>WG</i> <sub>140</sub> |                 | 10 20.5  | 19°52'  | 4°4'/16.9  | 18   | <b>514510</b> | 2016 <i>WP</i> <sub>36</sub>  |                 | 10 20.5   | 211°58' | 3°7'/17.4 | 18   |
| 9 18          | 2 3.33                        | + 0 3.5         | 1.773    | 2.657   | 12.6       | 20.2 | 9 18          | 2 7.23                        | - 0 9.9         | 2.174     | 3.043   | 11.2      | 21.6 |
| 9 28          | 1 58.28                       | - 0 39.9        | 1.720    | 2.662   | 9.2        | 20.0 | 9 28          | 2 0.90                        | - 0 38.6        | 2.105     | 3.039   | 8.2       | 21.4 |
| 10 8          | 1 51.42                       | - 1 22.8        | 1.691    | 2.666   | 5.9        | 19.8 | 10 8          | 1 52.88                       | - 1 6.5         | 2.061     | 3.034   | 5.2       | 21.2 |
| 10 18         | 1 43.48                       | - 1 59.3        | 1.689    | 2.672   | 4.4        | 19.8 | 10 18         | 1 43.81                       | - 1 29.5        | 2.045     | 3.028   | 3.8       | 21.1 |
| 10 28         | 1 35.46                       | - 2 23.8        | 1.714    | 2.677   | 6.5        | 19.9 | 10 28         | 1 34.57                       | - 1 43.1        | 2.059     | 3.023   | 5.6       | 21.2 |
| 11 7          | 1 28.33                       | - 2 32.3        | 1.765    | 2.683   | 9.8        | 20.1 | 11 7          | 1 26.05                       | - 1 44.1        | 2.102     | 3.017   | 8.7       | 21.4 |
| 11 17         | 1 22.86                       | - 2 23.1        | 1.840    | 2.690   | 13.0       | 20.3 | 11 17         | 1 19.00                       | - 1 30.9        | 2.170     | 3.010   | 11.7      | 21.6 |
| 11 27         | 1 19.57                       | - 1 56.4        | 1.935    | 2.697   | 15.8       | 20.5 | 11 27         | 1 13.97                       | - 1 3.1         | 2.260     | 3.004   | 14.3      | 21.8 |
| <b>150486</b> | 2000 <i>QT</i> <sub>11</sub>  |                 | 10 20.5  | 11°00'  | 6°4'/15.6  | 18   | <b>444554</b> | 2006 <i>SW</i> <sub>325</sub> |                 | 10 20.5</ |         |           |      |

EPHEMERIDES

10 20.6

10 20.6

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$                | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$         | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------|--------------------|---------|------|---------------|-------------------------------|-----------------|----------|-------------|---------|------|
| <b>353058</b> | 2009 <i>DM</i> <sub>56</sub>  | 10 20.6 350°39  |          | 3°9/17.4 18        |         |      | <b>316507</b> | 2010 <i>VK</i> <sub>143</sub> | 10 20.6 73°57   |          | 3°1/17.7 18 |         |      |
| 9 18          | 2 2.87                        | + 3 29.2        | 1.582    | 2.471              | 13.6    | 20.5 | 9 18          | 2 3.49                        | + 3 29.2        | 2.012    | 2.888       | 11.7    | 20.7 |
| 9 28          | 1 58.23                       | + 2 28.3        | 1.523    | 2.468              | 9.8     | 20.3 | 9 28          | 1 58.22                       | + 2 41.5        | 1.960    | 2.900       | 8.4     | 20.6 |
| 10 8          | 1 51.52                       | + 1 23.1        | 1.486    | 2.465              | 6.0     | 20.1 | 10 8          | 1 51.33                       | + 1 51.5        | 1.933    | 2.911       | 5.0     | 20.4 |
| 10 18         | 1 43.55                       | + 0 20.7        | 1.476    | 2.463              | 3.9     | 20.0 | 10 18         | 1 43.54                       | + 1 4.1         | 1.934    | 2.922       | 3.1     | 20.3 |
| 10 28         | 1 35.40                       | - 0 31.1        | 1.492    | 2.462              | 6.4     | 20.1 | 10 28         | 1 35.70                       | + 0 24.9        | 1.963    | 2.933       | 5.1     | 20.4 |
| 11 7          | 1 28.18                       | - 1 6.2         | 1.534    | 2.461              | 10.3    | 20.3 | 11 7          | 1 28.68                       | - 0 1.9         | 2.020    | 2.944       | 8.4     | 20.7 |
| 11 17         | 1 22.76                       | - 1 21.0        | 1.599    | 2.460              | 14.1    | 20.6 | 11 17         | 1 23.15                       | - 0 13.7        | 2.102    | 2.955       | 11.5    | 20.9 |
| 11 27         | 1 19.75                       | - 1 14.5        | 1.684    | 2.460              | 17.2    | 20.8 | 11 27         | 1 19.60                       | - 0 9.6         | 2.206    | 2.967       | 14.1    | 21.1 |
| <b>389854</b> | 2012 <i>RT</i> <sub>24</sub>  | 10 20.6         |          | 6°07 8°5/26.5 18   |         |      | <b>17607</b>  | Táborsko                      | 10 20.6 93°42   |          | 0°4/20.9 18 |         |      |
| 9 18          | 2 7.60                        | +29 30.9        | 1.360    | 2.175              | 19.7    | 19.9 | 9 18          | 2 3.79                        | +13 49.0        | 2.047    | 2.903       | 12.4    | 18.7 |
| 9 28          | 2 2.49                        | +30 25.7        | 1.293    | 2.175              | 16.3    | 19.7 | 9 28          | 1 58.57                       | +13 24.9        | 1.978    | 2.905       | 9.1     | 18.5 |
| 10 8          | 1 54.37                       | +30 53.1        | 1.245    | 2.175              | 12.7    | 19.5 | 10 8          | 1 51.62                       | +12 50.0        | 1.933    | 2.907       | 5.3     | 18.3 |
| 10 18         | 1 44.19                       | +30 49.2        | 1.219    | 2.177              | 9.6     | 19.4 | 10 18         | 1 43.62                       | +12 7.2         | 1.914    | 2.909       | 1.3     | 18.0 |
| 10 28         | 1 33.54                       | +30 14.5        | 1.216    | 2.179              | 8.6     | 19.3 | 10 28         | 1 35.46                       | +11 21.2        | 1.925    | 2.911       | 2.9     | 18.1 |
| 11 7          | 1 24.09                       | +29 15.8        | 1.236    | 2.181              | 10.4    | 19.4 | 11 7          | 1 28.06                       | +10 37.3        | 1.964    | 2.913       | 6.8     | 18.4 |
| 11 17         | 1 17.23                       | +28 4.1         | 1.280    | 2.185              | 13.7    | 19.6 | 11 17         | 1 22.16                       | +10 0.4         | 2.030    | 2.915       | 10.4    | 18.6 |
| 11 27         | 1 13.77                       | +26 51.4        | 1.345    | 2.189              | 17.2    | 19.9 | 11 27         | 1 18.31                       | + 9 34.5        | 2.119    | 2.917       | 13.4    | 18.8 |
| <b>168746</b> | 2000 <i>QY</i> <sub>118</sub> | 10 20.6         |          | 55°32 4°8/23.8 18  |         |      | <b>487459</b> | 2014 <i>SR</i> <sub>100</sub> | 10 20.6 258°87  |          | 2°2/22.7 17 |         |      |
| 9 18          | 2 9.53                        | +22 31.6        | 1.127    | 1.982              | 20.4    | 19.2 | 9 18          | 2 4.54                        | +18 24.4        | 2.346    | 3.179       | 11.8    | 22.0 |
| 9 28          | 2 3.66                        | +22 36.6        | 1.085    | 2.002              | 15.7    | 18.9 | 9 28          | 1 59.03                       | +18 29.0        | 2.267    | 3.177       | 9.0     | 21.8 |
| 10 8          | 1 54.80                       | +22 14.7        | 1.061    | 2.023              | 10.6    | 18.7 | 10 8          | 1 51.88                       | +18 21.8        | 2.213    | 3.175       | 5.8     | 21.6 |
| 10 18         | 1 44.22                       | +21 27.3        | 1.060    | 2.044              | 5.9     | 18.5 | 10 18         | 1 43.69                       | +18 3.9         | 2.185    | 3.173       | 2.8     | 21.4 |
| 10 28         | 1 33.68                       | +20 21.3        | 1.082    | 2.066              | 5.4     | 18.6 | 10 28         | 1 35.29                       | +17 37.8        | 2.187    | 3.172       | 3.0     | 21.4 |
| 11 7          | 1 24.83                       | +19 7.6         | 1.129    | 2.088              | 9.5     | 18.9 | 11 7          | 1 27.52                       | +17 7.5         | 2.218    | 3.170       | 6.0     | 21.6 |
| 11 17         | 1 18.80                       | +17 57.8        | 1.200    | 2.109              | 14.0    | 19.2 | 11 17         | 1 21.11                       | +16 37.6        | 2.277    | 3.168       | 9.2     | 21.8 |
| 11 27         | 1 16.18                       | +17 0.9         | 1.290    | 2.132              | 17.9    | 19.5 | 11 27         | 1 16.62                       | +16 12.4        | 2.360    | 3.166       | 12.0    | 22.0 |
| <b>359596</b> | 2010 <i>VW</i> <sub>116</sub> | 10 20.6         |          | 34°52 0°7/21.0 18  |         |      | <b>192833</b> | 1999 <i>VP</i> <sub>107</sub> | 10 20.6 351°43  |          | 0°9/19.9 18 |         |      |
| 9 18          | 2 5.97                        | +12 49.6        | 1.558    | 2.427              | 14.9    | 20.0 | 9 18          | 2 4.68                        | + 9 55.2        | 1.456    | 2.336       | 15.1    | 20.0 |
| 9 28          | 2 0.39                        | +12 50.6        | 1.510    | 2.444              | 10.9    | 19.8 | 9 28          | 1 59.80                       | + 9 34.6        | 1.391    | 2.333       | 11.0    | 19.7 |
| 10 8          | 1 52.70                       | +12 40.5        | 1.485    | 2.461              | 6.4     | 19.6 | 10 8          | 1 52.58                       | + 9 4.0         | 1.349    | 2.329       | 6.2     | 19.5 |
| 10 18         | 1 43.79                       | +12 22.1        | 1.485    | 2.480              | 1.6     | 19.3 | 10 18         | 1 43.86                       | + 8 27.7        | 1.331    | 2.327       | 1.4     | 19.1 |
| 10 28         | 1 34.85                       | +11 59.8        | 1.512    | 2.499              | 3.4     | 19.5 | 10 28         | 1 34.87                       | + 7 51.9        | 1.340    | 2.325       | 4.3     | 19.3 |
| 11 7          | 1 27.02                       | +11 39.3        | 1.566    | 2.519              | 7.9     | 19.8 | 11 7          | 1 26.88                       | + 7 23.0        | 1.375    | 2.323       | 9.2     | 19.6 |
| 11 17         | 1 21.18                       | +11 25.1        | 1.645    | 2.539              | 11.9    | 20.1 | 11 17         | 1 20.92                       | + 7 6.3         | 1.433    | 2.323       | 13.6    | 19.9 |
| 11 27         | 1 17.88                       | +11 21.2        | 1.746    | 2.560              | 15.2    | 20.4 | 11 27         | 1 17.67                       | + 7 5.2         | 1.512    | 2.323       | 17.3    | 20.1 |
| <b>151389</b> | 2002 <i>EZ</i> <sub>69</sub>  | 10 20.6         |          | 164°00 0°2/20.3 18 |         |      | <b>288591</b> | 2004 <i>JJ</i> <sub>18</sub>  | 10 20.6 126°97  |          | 1°3/19.5 16 |         |      |
| 9 18          | 2 2.63                        | +12 9.8         | 2.326    | 3.182              | 11.1    | 20.5 | 9 18          | 2 8.37                        | + 9 0.3         | 1.754    | 2.621       | 13.6    | 21.5 |
| 9 28          | 1 57.53                       | +11 34.2        | 2.255    | 3.184              | 8.0     | 20.3 | 9 28          | 2 1.96                        | + 8 25.9        | 1.698    | 2.633       | 9.8     | 21.3 |
| 10 8          | 1 50.94                       | +10 49.8        | 2.210    | 3.186              | 4.6     | 20.1 | 10 8          | 1 53.58                       | + 7 43.6        | 1.666    | 2.645       | 5.5     | 21.1 |
| 10 18         | 1 43.46                       | + 9 59.8        | 2.192    | 3.188              | 0.9     | 19.9 | 10 18         | 1 44.04                       | + 6 57.9        | 1.661    | 2.656       | 1.5     | 20.8 |
| 10 28         | 1 35.84                       | + 9 8.8         | 2.204    | 3.189              | 2.9     | 20.0 | 10 28         | 1 34.43                       | + 6 14.7        | 1.684    | 2.666       | 4.1     | 21.0 |
| 11 7          | 1 28.89                       | + 8 21.6        | 2.246    | 3.190              | 6.4     | 20.3 | 11 7          | 1 25.84                       | + 5 39.7        | 1.736    | 2.676       | 8.3     | 21.3 |
| 11 17         | 1 23.23                       | + 7 42.5        | 2.314    | 3.191              | 9.6     | 20.5 | 11 17         | 1 19.10                       | + 5 16.9        | 1.813    | 2.686       | 12.1    | 21.6 |
| 11 27         | 1 19.38                       | + 7 14.9        | 2.407    | 3.192              | 12.4    | 20.7 | 11 27         | 1 14.76                       | + 5 9.1         | 1.912    | 2.695       | 15.2    | 21.8 |
| <b>514015</b> | 2014 <i>JL</i> <sub>84</sub>  | 10 20.6         |          | 163°73 0°3/20.9 18 |         |      | <b>378151</b> | 2006 <i>VS</i> <sub>115</sub> | 10 20.6 328°79  |          | 0°1/20.6 18 |         |      |
| 9 18          | 2 4.46                        | +13 53.0        | 2.228    | 3.079              | 11.7    | 22.0 | 9 18          | 2 2.57                        | +12 59.2        | 1.132    | 2.023       | 17.7    | 20.7 |
| 9 28          | 1 58.90                       | +13 19.0        | 2.158    | 3.083              | 8.6     | 21.8 | 9 28          | 1 59.00                       | +12 35.2        | 1.060    | 2.005       | 13.1    | 20.4 |
| 10 8          | 1 51.74                       | +12 34.4        | 2.112    | 3.086              | 5.0     | 21.6 | 10 8          | 1 52.47                       | +11 53.8        | 1.007    | 1.988       | 7.7     | 20.1 |
| 10 18         | 1 43.62                       | +11 42.5        | 2.094    | 3.090              | 1.2     | 21.3 | 10 18         | 1 43.89                       | +10 58.9        | 0.977    | 1.972       | 1.7     | 19.6 |
| 10 28         | 1 35.38                       | +10 47.9        | 2.107    | 3.092              | 2.8     | 21.5 | 10 28         | 1 34.72                       | + 9 58.7        | 0.970    | 1.957       | 4.6     | 19.8 |
| 11 7          | 1 27.85                       | + 9 55.9        | 2.148    | 3.095              | 6.5     | 21.7 | 11 7          | 1 26.62                       | + 9 3.6         | 0.987    | 1.943       | 10.7    | 20.1 |
| 11 17         | 1 21.74                       | + 9 11.3        | 2.217    | 3.097              | 9.9     | 21.9 | 11 17         | 1 20.96                       | + 8 22.6        | 1.025    | 1.931       | 16.2    | 20.4 |
| 11 27         | 1 17.56                       | + 8 38.0        | 2.310    | 3.098              | 12.7    | 22.1 | 11 27         | 1 18.65                       | + 8 2.2         | 1.081    | 1.920       | 20.8    | 20.6 |
| <b>116614</b> | 2004 <i>BT</i> <sub>114</sub> | 10 20.6         |          | 181°18 4°1/23.8 18 |         |      | <b>445424</b> | 2010 <i>TL</i> <sub>187</sub> | 10 20.6 327°94  |          | 0°6/20.2 18 |         |      |
| 9 18          | 2 8.12                        | +22 49.1        | 1.666    | 2.495              | 16.0    | 20.1 | 9 18          | 2 6.34                        | + 9 8.2         | 1.789    | 2.658       | 13.3    | 20.7 |
| 9 28          | 2 2.21                        | +22 47.8        | 1.592    | 2.495              | 12.5    | 19.8 | 9 28          | 2 0.72                        | + 9 10.0        | 1.714    | 2.649       | 9.7     | 20.4 |
| 10 8          | 1 53.92                       | +22 25.9        | 1.541    | 2.496              | 8.6     | 19.6 | 10 8          | 1 53.03                       | + 9 5.2         | 1.663    | 2.641       | 5.5     | 20.2 |
| 10 18         | 1 44.10                       | +21 43.7        | 1.514    | 2.496              | 4.9     | 19.4 | 10 18         | 1 43.97                       | + 8 56.4        | 1.638    | 2.633       | 1.2     | 19.8 |
| 10 28         | 1 34.00                       | +20 45.2        | 1.514    | 2.496              | 4.5     | 19.4 | 10 28         | 1 34.60                       | + 8 47.4        | 1.641    | 2.626       | 3.6     | 20.0 |
| 11 7          | 1 24.89                       | +19 37.8        | 1.542    | 2.495              | 7.9     | 19.6 | 11 7          | 1 26.02                       | + 8 42.3        | 1.672    | 2.618       | 8.0     | 20.3 |
| 11 17         | 1 17.83                       | +18 30.2        | 1.595    | 2.494              | 11.9    | 19.8 | 11 17         | 1 19.16                       | + 8 44.7        | 1.728    | 2.612       | 12.0    | 20.5 |
| 11 27         | 1 13.51                       | +17 30.6        | 1.671    | 2.493              | 15.4    | 20.0 | 11 27         | 1 14.70                       | + 8 57.6        | 1.806    | 2.605       | 15.3    | 20.7 |
| <b>322187</b> | 2010 <i>XM</i> <sub>59</sub>  | 10 20.6         |          | 356°00 0°2/20.8 18 |         |      | <b>102146</b> | 1999 <i>RW</i> <sub>191</sub> | 10 20.6 330°88  |          | 2°3/21.9 18 |         |      |
| 9 18          | 2 2.36                        | +13 23.1        | 1.985    | 2.846              | 12.5    | 20.3 | 9 18          | 2 3.24                        | +16 4.3         | 1.278    | 2.153       | 17.1    | 19.4 |
| 9 28          | 1 57.59                       | +12 52.8        | 1.914    | 2.845              | 9.1     | 20.1 | 9 28          | 1 59.37                       | +16 14.9        | 1.197    | 2.132       | 13.0    | 19.1 |
| 10 8          | 1 51.08                       | +12 11.4        | 1.868    | 2.844              | 5.3     | 19.9 | 10 8          | 1 52.67                       | +16 8.9         | 1.137    | 2.111       | 8.2     | 18.8 |
| 10 18         | 1 43.50                       | +11 22.3        | 1.848    | 2.843              | 1.2     | 19.6 | 10 18         | 1 43.96                       | +15 47.2        | 1.099    | 2.091       | 3.3     | 18.4 |
| 10 28         | 1 35.74                       | +10 30.6        | 1.857    | 2.843              | 3.0     | 19.7 | 10 28         | 1 34.57                       | +15 14.0        | 1.085    | 2.073       | 4.2     | 18.4 |
| 11 7          | 1 28.73                       | + 9 42.0        | 1.894    | 2.843              | 7.1     | 20.0 | 11 7          | 1 26.08                       | +14 36.7        | 1.096    | 2.055       | 9.5     | 18.7 |
| 11 17         | 1 23.22                       | + 9 1.7         | 1.957    | 2.843              | 10.7    | 20.2 | 11 17         | 1 19.85                       | +14 3.4         | 1.129    | 2.039       | 14.7    | 18.9 |
| 11 27         | 1 19.77                       | + 8 33.7        | 2.043    | 2.843              | 13.8    | 20.4 | 11 27         | 1 16.83                       | +13 41.7        | 1.182    | 2.024       | 19.1    | 19.2 |
| <b>244901</b> | 2003 <i>WO</i> <sub>86</sub>  | 10 20.6         |          | 299°73 7°3/28.5 18 |         |      | <b>345301</b> | 2005 <i>WJ</i> <sub>166</sub> | 10 20.6 336°27  |          | 0°2/20.8 15 |         |      |
| 9 18          | 2 4.16                        | +35 3.9         | 1        |                    |         |      |               |                               |                 |          |             |         |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------------|----------|---------|------|---------------|-------------------------------|-----------------|----------------|----------|---------|------|
| <b>381866</b> | 2010 <i>AF</i> <sub>6</sub>   |                 | 10 20.6 305°07 | 7.4/14.8 | 18      |      | <b>123238</b> | 2000 <i>UN</i> <sub>58</sub>  |                 | 10 20.6 307°02 | 2.3/22.3 | 18      |      |
| 9 18          | 2 5.04                        | - 4 48.1        | 1.494          | 2.384    | 14.2    | 20.2 | 9 18          | 2 4.73                        | +18 3.4         | 1.543          | 2.400    | 15.7    | 19.3 |
| 9 28          | 1 59.97                       | - 6 6.6         | 1.437          | 2.376    | 10.9    | 19.9 | 9 28          | 1 59.97                       | +17 51.0        | 1.464          | 2.387    | 11.9    | 19.0 |
| 10 8          | 1 52.63                       | - 7 21.2        | 1.403          | 2.368    | 8.1     | 19.8 | 10 8          | 1 52.79                       | +17 20.6        | 1.406          | 2.375    | 7.6     | 18.8 |
| 10 18         | 1 43.89                       | - 8 22.5        | 1.393          | 2.360    | 7.6     | 19.7 | 10 18         | 1 43.98                       | +16 33.9        | 1.372          | 2.363    | 3.2     | 18.5 |
| 10 28         | 1 34.92                       | - 9 2.0         | 1.409          | 2.353    | 9.8     | 19.8 | 10 28         | 1 34.75                       | +15 35.9        | 1.365          | 2.352    | 3.7     | 18.5 |
| 11 7          | 1 26.93                       | - 9 14.6        | 1.449          | 2.345    | 13.2    | 20.0 | 11 7          | 1 26.40                       | +14 34.4        | 1.384          | 2.340    | 8.3     | 18.7 |
| 11 17         | 1 20.92                       | - 8 59.4        | 1.510          | 2.338    | 16.5    | 20.2 | 11 17         | 1 20.03                       | +13 37.8        | 1.429          | 2.329    | 12.8    | 19.0 |
| 11 27         | 1 17.51                       | - 8 18.3        | 1.590          | 2.331    | 19.5    | 20.4 | 11 27         | 1 16.42                       | +12 53.1        | 1.494          | 2.319    | 16.7    | 19.2 |
| <b>410898</b> | 2009 <i>SX</i> <sub>116</sub> |                 | 10 20.6 277°55 | 1.5/22.1 | 18      |      | <b>511697</b> | 2015 <i>CG</i> <sub>9</sub>   |                 | 10 20.6 203°07 | 3.6/17.7 | 17      |      |
| 9 18          | 2 2.36                        | +17 27.8        | 2.236          | 3.078    | 12.0    | 21.2 | 9 18          | 2 5.87                        | + 5 46.2        | 1.458          | 2.343    | 14.8    | 21.5 |
| 9 28          | 1 57.51                       | +17 3.7         | 2.157          | 3.074    | 9.0     | 21.0 | 9 28          | 2 0.60                        | + 4 28.6        | 1.398          | 2.342    | 10.7    | 21.2 |
| 10 8          | 1 51.03                       | +16 26.6        | 2.102          | 3.070    | 5.6     | 20.8 | 10 8          | 1 53.01                       | + 3 2.8         | 1.360          | 2.341    | 6.3     | 21.0 |
| 10 18         | 1 43.55                       | +15 38.9        | 2.074          | 3.066    | 2.2     | 20.6 | 10 18         | 1 44.01                       | + 1 37.2        | 1.349          | 2.339    | 3.6     | 20.8 |
| 10 28         | 1 35.87                       | +14 44.6        | 2.076          | 3.062    | 2.7     | 20.6 | 10 28         | 1 34.80                       | + 0 21.3        | 1.364          | 2.337    | 6.5     | 21.0 |
| 11 7          | 1 28.85                       | +13 49.1        | 2.106          | 3.058    | 6.2     | 20.8 | 11 7          | 1 26.65                       | - 0 36.7        | 1.406          | 2.335    | 10.9    | 21.3 |
| 11 17         | 1 23.19                       | +12 57.8        | 2.164          | 3.054    | 9.6     | 21.0 | 11 17         | 1 20.53                       | - 1 11.7        | 1.470          | 2.333    | 15.0    | 21.5 |
| 11 27         | 1 19.44                       | +12 15.5        | 2.245          | 3.050    | 12.5    | 21.2 | 11 27         | 1 17.09                       | - 1 22.2        | 1.554          | 2.331    | 18.4    | 21.7 |
| <b>205135</b> | 1999 <i>VM</i> <sub>183</sub> |                 | 10 20.6 308°87 | 3.3/18.6 | 18      |      | <b>99494</b>  | 2002 <i>CH</i> <sub>239</sub> |                 | 10 20.6 57°58  | 0.3/20.8 | 18      |      |
| 9 18          | 2 8.83                        | + 2 38.1        | 1.563          | 2.442    | 14.3    | 19.6 | 9 18          | 2 5.37                        | +14 8.4         | 1.488          | 2.357    | 15.5    | 19.3 |
| 9 28          | 2 2.85                        | + 2 30.6        | 1.485          | 2.426    | 10.5    | 19.3 | 9 28          | 2 0.08                        | +13 29.6        | 1.438          | 2.372    | 11.3    | 19.1 |
| 10 8          | 1 54.40                       | + 2 22.1        | 1.431          | 2.409    | 6.3     | 19.1 | 10 8          | 1 52.62                       | +12 36.3        | 1.410          | 2.387    | 6.5     | 18.8 |
| 10 18         | 1 44.29                       | + 2 17.0        | 1.402          | 2.393    | 3.3     | 18.9 | 10 18         | 1 43.90                       | +11 33.6        | 1.407          | 2.403    | 1.5     | 18.5 |
| 10 28         | 1 33.74                       | + 2 20.2        | 1.401          | 2.377    | 5.8     | 19.0 | 10 28         | 1 35.16                       | +10 28.5        | 1.432          | 2.418    | 3.6     | 18.7 |
| 11 7          | 1 24.04                       | + 2 35.6        | 1.426          | 2.362    | 10.2    | 19.2 | 11 7          | 1 27.57                       | + 9 29.2        | 1.483          | 2.434    | 8.4     | 19.1 |
| 11 17         | 1 16.33                       | + 3 5.4         | 1.476          | 2.347    | 14.4    | 19.4 | 11 17         | 1 22.02                       | + 8 42.1        | 1.559          | 2.451    | 12.6    | 19.4 |
| 11 27         | 1 11.37                       | + 3 50.3        | 1.546          | 2.332    | 18.1    | 19.6 | 11 27         | 1 19.04                       | + 8 11.5        | 1.656          | 2.467    | 16.0    | 19.6 |
| <b>429530</b> | 2011 <i>BG</i> <sub>92</sub>  |                 | 10 20.6 113°86 | 3.1/23.2 | 16      |      | <b>74360</b>  | 1998 <i>WO</i> <sub>14</sub>  |                 | 10 20.6 291°69 | 1.9/19.1 | 18      |      |
| 9 18          | 2 7.76                        | +21 8.9         | 1.631          | 2.468    | 15.9    | 21.0 | 9 18          | 2 4.72                        | + 7 24.8        | 1.786          | 2.661    | 13.0    | 19.1 |
| 9 28          | 2 1.83                        | +20 50.7        | 1.568          | 2.479    | 12.2    | 20.8 | 9 28          | 1 59.62                       | + 6 51.2        | 1.704          | 2.644    | 9.4     | 18.9 |
| 10 8          | 1 53.64                       | +20 12.5        | 1.528          | 2.489    | 8.0     | 20.6 | 10 8          | 1 52.45                       | + 6 10.2        | 1.647          | 2.626    | 5.4     | 18.6 |
| 10 18         | 1 44.10                       | +19 16.3        | 1.512          | 2.499    | 4.0     | 20.4 | 10 18         | 1 43.91                       | + 5 26.4        | 1.615          | 2.609    | 2.0     | 18.4 |
| 10 28         | 1 34.43                       | +18 7.5         | 1.525          | 2.509    | 3.9     | 20.4 | 10 28         | 1 35.01                       | + 4 45.6        | 1.612          | 2.592    | 4.6     | 18.5 |
| 11 7          | 1 25.86                       | +16 54.3        | 1.564          | 2.519    | 7.7     | 20.6 | 11 7          | 1 26.83                       | + 4 13.5        | 1.636          | 2.575    | 8.8     | 18.7 |
| 11 17         | 1 19.34                       | +15 45.2        | 1.630          | 2.528    | 11.7    | 20.9 | 11 17         | 1 20.30                       | + 3 54.9        | 1.685          | 2.558    | 12.8    | 18.9 |
| 11 27         | 1 15.48                       | +14 47.4        | 1.718          | 2.537    | 15.2    | 21.1 | 11 27         | 1 16.11                       | + 3 52.4        | 1.755          | 2.541    | 16.2    | 19.1 |
| <b>147961</b> | 1994 <i>EU</i> <sub>4</sub>   |                 | 10 20.6 208°13 | 3.0/18.2 | 17      |      | <b>150810</b> | 2001 <i>RN</i> <sub>105</sub> |                 | 10 20.6 77°91  | 4.7/17.0 | 18      |      |
| 9 18          | 2 5.82                        | + 6 51.3        | 1.541          | 2.422    | 14.4    | 20.9 | 9 18          | 2 5.99                        | + 2 26.5        | 1.460          | 2.348    | 14.6    | 20.2 |
| 9 28          | 2 0.48                        | + 5 41.9        | 1.478          | 2.420    | 10.3    | 20.6 | 9 28          | 2 0.50                        | + 1 12.6        | 1.415          | 2.359    | 10.5    | 20.0 |
| 10 8          | 1 52.91                       | + 4 23.7        | 1.437          | 2.418    | 6.0     | 20.4 | 10 8          | 1 52.84                       | - 0 3.8         | 1.393          | 2.371    | 6.5     | 19.8 |
| 10 18         | 1 43.96                       | + 3 3.9         | 1.423          | 2.415    | 3.0     | 20.2 | 10 18         | 1 43.96                       | - 1 14.3        | 1.398          | 2.383    | 4.7     | 19.7 |
| 10 28         | 1 34.81                       | + 1 51.4        | 1.437          | 2.412    | 5.8     | 20.4 | 10 28         | 1 35.06                       | - 2 10.4        | 1.428          | 2.394    | 7.2     | 19.9 |
| 11 7          | 1 26.65                       | + 0 54.1        | 1.477          | 2.409    | 10.2    | 20.6 | 11 7          | 1 27.32                       | - 2 46.1        | 1.485          | 2.406    | 11.1    | 20.2 |
| 11 17         | 1 20.43                       | + 0 17.1        | 1.541          | 2.406    | 14.3    | 20.9 | 11 17         | 1 21.60                       | - 2 58.8        | 1.564          | 2.418    | 14.7    | 20.4 |
| 11 27         | 1 16.80                       | + 0 2.5         | 1.624          | 2.403    | 17.7    | 21.1 | 11 27         | 1 18.46                       | - 2 48.6        | 1.663          | 2.430    | 17.8    | 20.7 |
| <b>344436</b> | 2002 <i>GE</i> <sub>12</sub>  |                 | 10 20.6 167°81 | 0.8/19.9 | 18      |      | <b>183242</b> | 2002 <i>TT</i> <sub>107</sub> |                 | 10 20.6 150°85 | 0.6/20.1 | 18      |      |
| 9 18          | 2 8.83                        | + 8 52.5        | 2.386          | 3.237    | 11.0    | 21.6 | 9 18          | 2 6.02                        | +12 51.1        | 1.616          | 2.482    | 14.6    | 20.3 |
| 9 28          | 2 1.96                        | + 8 38.0        | 2.316          | 3.243    | 7.9     | 21.4 | 9 28          | 2 0.53                        | +11 53.5        | 1.552          | 2.486    | 10.6    | 20.1 |
| 10 8          | 1 53.49                       | + 8 18.0        | 2.272          | 3.248    | 4.5     | 21.2 | 10 8          | 1 52.90                       | +10 41.9        | 1.512          | 2.490    | 6.0     | 19.9 |
| 10 18         | 1 44.07                       | + 7 55.0        | 2.257          | 3.252    | 1.1     | 21.0 | 10 18         | 1 43.99                       | + 9 22.0        | 1.499          | 2.494    | 1.2     | 19.5 |
| 10 28         | 1 34.52                       | + 7 32.5        | 2.273          | 3.255    | 3.1     | 21.2 | 10 28         | 1 34.92                       | + 8 1.5         | 1.513          | 2.497    | 4.0     | 19.7 |
| 11 7          | 1 25.68                       | + 7 14.2        | 2.320          | 3.258    | 6.6     | 21.4 | 11 7          | 1 26.87                       | + 6 48.9        | 1.555          | 2.500    | 8.6     | 20.0 |
| 11 17         | 1 18.25                       | + 7 3.1         | 2.394          | 3.260    | 9.8     | 21.6 | 11 17         | 1 20.73                       | + 5 51.0        | 1.622          | 2.503    | 12.8    | 20.3 |
| 11 27         | 1 12.74                       | + 7 1.6         | 2.493          | 3.261    | 12.5    | 21.8 | 11 27         | 1 17.10                       | + 5 12.0        | 1.711          | 2.506    | 16.2    | 20.5 |
| <b>311819</b> | 2006 <i>UY</i> <sub>247</sub> |                 | 10 20.6 37°27  | 0.6/20.2 | 18      |      | <b>45319</b>  | 2000 <i>AQ</i> <sub>63</sub>  |                 | 10 20.6 44°23  | 8.2/27.1 | 18      |      |
| 9 18          | 2 9.01                        | + 8 31.5        | 1.774          | 2.640    | 13.5    | 20.7 | 9 18          | 2 9.45                        | +31 1.1         | 1.585          | 2.378    | 18.3    | 17.9 |
| 9 28          | 2 2.55                        | + 8 40.7        | 1.711          | 2.644    | 9.8     | 20.5 | 9 28          | 2 3.44                        | +31 54.3        | 1.526          | 2.391    | 15.2    | 17.8 |
| 10 8          | 1 54.01                       | + 8 44.3        | 1.671          | 2.649    | 5.6     | 20.3 | 10 8          | 1 54.76                       | +32 21.5        | 1.487          | 2.405    | 12.0    | 17.6 |
| 10 18         | 1 44.19                       | + 8 44.5        | 1.658          | 2.654    | 1.2     | 20.0 | 10 18         | 1 44.39                       | +32 19.5        | 1.470          | 2.419    | 9.2     | 17.5 |
| 10 28         | 1 34.19                       | + 8 44.6        | 1.674          | 2.658    | 3.6     | 20.2 | 10 28         | 1 33.76                       | +31 49.3        | 1.479          | 2.434    | 8.2     | 17.5 |
| 11 7          | 1 25.12                       | + 8 48.3        | 1.718          | 2.664    | 7.9     | 20.5 | 11 7          | 1 24.33                       | +30 57.3        | 1.512          | 2.449    | 9.6     | 17.6 |
| 11 17         | 1 17.89                       | + 8 58.7        | 1.788          | 2.669    | 11.8    | 20.7 | 11 17         | 1 17.26                       | +29 52.7        | 1.570          | 2.465    | 12.3    | 17.8 |
| 11 27         | 1 13.10                       | + 9 18.2        | 1.880          | 2.674    | 15.0    | 20.9 | 11 27         | 1 13.25                       | +28 46.0        | 1.650          | 2.481    | 15.1    | 18.0 |
| <b>99211</b>  | 2001 <i>HD</i> <sub>37</sub>  |                 | 10 20.6 118°06 | 4.6/16.9 | 18      |      | <b>402431</b> | 2006 <i>AK</i> <sub>42</sub>  |                 | 10 20.6 337°61 | 7.9/28.4 | 17      |      |
| 9 18          | 2 8.03                        | - 2 12.2        | 1.988          | 2.861    | 12.0    | 19.5 | 9 18          | 2 4.91                        | +34 22.7        | 2.019          | 2.780    | 15.9    | 20.6 |
| 9 28          | 2 1.50                        | - 2 46.7        | 1.938          | 2.871    | 8.9     | 19.3 | 9 28          | 1 59.90                       | +34 54.6        | 1.936          | 2.775    | 13.6    | 20.4 |
| 10 8          | 1 53.25                       | - 3 18.3        | 1.912          | 2.881    | 5.9     | 19.2 | 10 8          | 1 52.67                       | +35 2.8         | 1.872          | 2.770    | 11.0    | 20.3 |
| 10 18         | 1 44.02                       | - 3 42.1        | 1.914          | 2.891    | 4.7     | 19.1 | 10 18         | 1 43.97                       | +34 44.6        | 1.832          | 2.766    | 8.9     | 20.1 |
| 10 28         | 1 34.76                       | - 3 53.5        | 1.944          | 2.901    | 6.4     | 19.2 | 10 28         | 1 34.89                       | +34 0.5         | 1.816          | 2.761    | 7.9     | 20.1 |
| 11 7          | 1 26.41                       | - 3 49.6        | 2.002          | 2.911    | 9.4     | 19.4 | 11 7          | 1 26.62                       | +32 55.3        | 1.827          | 2.757    | 8.7     | 20.1 |
| 11 17         | 1 19.70                       | - 3 29.7        | 2.085          | 2.920    | 12.3    | 19.7 | 11 17         | 1 20.16                       | +31 36.8        | 1.863          | 2.754    | 10.9    | 20.2 |
| 11 27         | 1 15.13                       | - 2 54.3        | 2.190          | 2.929    | 14.8    | 19.9 | 11 27         | 1 16.22                       | +30 14.0        | 1.923          | 2.750    | 13.4    | 20.4 |
| <b>86124</b>  | 1999 <i>RK</i> <sub>147</sub> |                 | 10 20.6 240°16 | 3.9/24.5 | 18      |      | <b>488151</b> | 2015 <i>VS</i> <sub>148</sub> |                 | 10             |          |         |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$       | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------------|----------|---------|------|---------------|-------------------------------|-----------------|----------------|-----------|---------|------|
| <b>266195</b> | 2006 <i>VT</i> <sub>134</sub> |                 | 10 20.6 290°11 | 3°6/23.1 | 18      |      | <b>130848</b> | 2000 <i>UF</i> <sub>64</sub>  |                 | 10 20.6 69°61  | 3°8/23.4  | 18      |      |
| 9 18          | 2 6.13                        | +20 48.9        | 1.472          | 2.320    | 16.8    | 20.4 | 9 18          | 2 8.49                        | +21 49.1        | 1.265          | 2.116     | 18.8    | 19.8 |
| 9 28          | 2 1.28                        | +20 44.1        | 1.384          | 2.300    | 13.1    | 20.1 | 9 28          | 2 2.80                        | +21 33.9        | 1.214          | 2.131     | 14.4    | 19.6 |
| 10 8          | 1 53.71                       | +20 17.7        | 1.316          | 2.279    | 8.8     | 19.8 | 10 8          | 1 54.37                       | +20 53.8        | 1.183          | 2.147     | 9.5     | 19.4 |
| 10 18         | 1 44.23                       | +19 29.9        | 1.272          | 2.259    | 4.5     | 19.5 | 10 18         | 1 44.34                       | +19 51.3        | 1.176          | 2.163     | 4.9     | 19.1 |
| 10 28         | 1 34.12                       | +18 24.9        | 1.254          | 2.239    | 4.5     | 19.4 | 10 28         | 1 34.26                       | +18 33.3        | 1.193          | 2.179     | 4.6     | 19.2 |
| 11 7          | 1 24.86                       | +17 11.1        | 1.262          | 2.219    | 8.9     | 19.6 | 11 7          | 1 25.62                       | +17 10.8        | 1.237          | 2.194     | 8.9     | 19.5 |
| 11 17         | 1 17.73                       | +15 58.4        | 1.295          | 2.199    | 13.6    | 19.9 | 11 17         | 1 19.52                       | +15 54.4        | 1.304          | 2.210     | 13.4    | 19.8 |
| 11 27         | 1 13.64                       | +14 56.5        | 1.348          | 2.179    | 17.9    | 20.1 | 11 27         | 1 16.56                       | +14 52.7        | 1.393          | 2.226     | 17.3    | 20.1 |
| <b>428377</b> | 2007 <i>RG</i> <sub>253</sub> |                 | 10 20.6 310°36 | 1°6/19.6 | 18      |      | <b>131025</b> | 2000 <i>XO</i> <sub>39</sub>  |                 | 10 20.6 242°77 | 8°0/27.2  | 18      |      |
| 9 18          | 2 4.81                        | + 9 53.0        | 1.167          | 2.058    | 17.2    | 21.2 | 9 18          | 2 9.95                        | +32 36.6        | 1.908          | 2.677     | 16.5    | 19.6 |
| 9 28          | 2 0.63                        | + 9 15.6        | 1.091          | 2.038    | 12.6    | 20.9 | 9 28          | 2 3.75                        | +33 23.6        | 1.824          | 2.671     | 13.9    | 19.4 |
| 10 8          | 1 53.47                       | + 8 23.7        | 1.035          | 2.018    | 7.3     | 20.5 | 10 8          | 1 55.02                       | +33 47.6        | 1.759          | 2.664     | 11.2    | 19.2 |
| 10 18         | 1 44.19                       | + 7 23.0        | 1.003          | 1.998    | 1.9     | 20.1 | 10 18         | 1 44.53                       | +33 45.1        | 1.718          | 2.658     | 8.9     | 19.1 |
| 10 28         | 1 34.26                       | + 6 22.4        | 0.994          | 1.979    | 5.5     | 20.3 | 10 28         | 1 33.52                       | +33 15.5        | 1.703          | 2.651     | 8.0     | 19.0 |
| 11 7          | 1 25.34                       | + 5 32.3        | 1.010          | 1.960    | 11.5    | 20.6 | 11 7          | 1 23.35                       | +32 23.5        | 1.714          | 2.644     | 9.2     | 19.1 |
| 11 17         | 1 18.85                       | + 5 0.7         | 1.047          | 1.942    | 16.9    | 20.8 | 11 17         | 1 15.19                       | +31 16.8        | 1.750          | 2.637     | 11.7    | 19.2 |
| 11 27         | 1 15.71                       | + 4 52.5        | 1.101          | 1.925    | 21.5    | 21.1 | 11 27         | 1 9.86                        | +30 5.2         | 1.810          | 2.630     | 14.5    | 19.4 |
| <b>348120</b> | 2004 <i>AY</i> <sub>3</sub>   |                 | 10 20.6 166°52 | 7°6/13.3 | 18      |      | <b>340320</b> | 2006 <i>DC</i> <sub>23</sub>  |                 | 10 20.6 332°37 | 2°5/18.7  | 18      |      |
| 9 18          | 2 5.59                        | -11 2.0         | 2.093          | 2.961    | 11.7    | 20.8 | 9 18          | 2 4.83                        | + 6 55.6        | 1.539          | 2.421     | 14.3    | 20.3 |
| 9 28          | 1 59.75                       | -12 10.9        | 2.046          | 2.963    | 9.4     | 20.6 | 9 28          | 1 59.82                       | + 6 9.4         | 1.475          | 2.418     | 10.3    | 20.0 |
| 10 8          | 1 52.28                       | -13 10.6        | 2.024          | 2.966    | 7.8     | 20.5 | 10 8          | 1 52.60                       | + 5 15.6        | 1.434          | 2.414     | 5.9     | 19.8 |
| 10 18         | 1 43.85                       | -13 54.7        | 2.028          | 2.968    | 7.8     | 20.5 | 10 18         | 1 44.00                       | + 4 20.1        | 1.418          | 2.411     | 2.5     | 19.5 |
| 10 28         | 1 35.37                       | -14 17.8        | 2.059          | 2.969    | 9.2     | 20.6 | 10 28         | 1 35.16                       | + 3 30.2        | 1.430          | 2.409     | 5.3     | 19.7 |
| 11 7          | 1 27.70                       | -14 17.6        | 2.116          | 2.971    | 11.5    | 20.8 | 11 7          | 1 27.28                       | + 2 52.6        | 1.467          | 2.406     | 9.7     | 20.0 |
| 11 17         | 1 21.55                       | -13 54.3        | 2.195          | 2.972    | 13.7    | 21.0 | 11 17         | 1 21.32                       | + 2 32.0        | 1.529          | 2.404     | 13.8    | 20.2 |
| 11 27         | 1 17.41                       | -13 10.2        | 2.293          | 2.973    | 15.8    | 21.1 | 11 27         | 1 17.91                       | + 2 30.5        | 1.611          | 2.402     | 17.3    | 20.4 |
| <b>132422</b> | 2002 <i>GO</i> <sub>144</sub> |                 | 10 20.6 113°71 | 6°7/15.5 | 18      |      | <b>161415</b> | 2003 <i>UM</i> <sub>253</sub> |                 | 10 20.6 342°99 | 10°4/13.3 | 18      |      |
| 9 18          | 2 8.32                        | - 6 53.8        | 1.810          | 2.684    | 12.9    | 20.0 | 9 18          | 2 3.80                        | -10 42.8        | 1.282          | 2.175     | 15.8    | 18.6 |
| 9 28          | 2 1.85                        | - 7 44.2        | 1.764          | 2.693    | 9.9     | 19.8 | 9 28          | 1 59.40                       | -11 59.7        | 1.231          | 2.164     | 12.8    | 18.4 |
| 10 8          | 1 53.51                       | - 8 27.5        | 1.743          | 2.702    | 7.4     | 19.7 | 10 8          | 1 52.48                       | -13 4.5         | 1.201          | 2.154     | 10.8    | 18.2 |
| 10 18         | 1 44.11                       | - 8 57.1        | 1.748          | 2.711    | 6.8     | 19.7 | 10 18         | 1 43.98                       | -13 46.2        | 1.194          | 2.145     | 10.7    | 18.2 |
| 10 28         | 1 34.71                       | - 9 7.7         | 1.781          | 2.719    | 8.5     | 19.8 | 10 28         | 1 35.24                       | -13 56.2        | 1.210          | 2.137     | 12.8    | 18.3 |
| 11 7          | 1 26.31                       | - 8 57.1        | 1.839          | 2.727    | 11.3    | 20.0 | 11 7          | 1 27.63                       | -13 31.3        | 1.247          | 2.130     | 15.9    | 18.5 |
| 11 17         | 1 19.70                       | - 8 25.4        | 1.921          | 2.735    | 14.0    | 20.2 | 11 17         | 1 22.21                       | -12 33.2        | 1.303          | 2.124     | 19.0    | 18.7 |
| 11 27         | 1 15.40                       | - 7 34.8        | 2.023          | 2.743    | 16.5    | 20.4 | 11 27         | 1 19.67                       | -11 6.9         | 1.375          | 2.119     | 21.9    | 18.9 |
| <b>185750</b> | 1999 <i>RT</i> <sub>74</sub>  |                 | 10 20.6 10°77  | 2°5/18.8 | 18      |      | <b>129739</b> | 1999 <i>CA</i> <sub>9</sub>   |                 | 10 20.6 90°89  | 0°5/20.3  | 18      |      |
| 9 18          | 2 2.23                        | + 6 15.6        | 1.483          | 2.372    | 14.3    | 19.4 | 9 18          | 2 10.17                       | +12 9.7         | 1.356          | 2.227     | 16.6    | 19.4 |
| 9 28          | 1 57.89                       | + 5 42.0        | 1.430          | 2.376    | 10.3    | 19.2 | 9 28          | 2 3.66                        | +11 30.6        | 1.311          | 2.247     | 12.0    | 19.2 |
| 10 8          | 1 51.43                       | + 5 2.6         | 1.399          | 2.380    | 5.9     | 19.0 | 10 8          | 1 54.72                       | +10 38.5        | 1.288          | 2.266     | 6.8     | 18.9 |
| 10 18         | 1 43.70                       | + 4 22.9        | 1.393          | 2.386    | 2.5     | 18.8 | 10 18         | 1 44.41                       | + 9 38.7        | 1.290          | 2.285     | 1.4     | 18.6 |
| 10 28         | 1 35.84                       | + 3 49.4        | 1.413          | 2.393    | 5.2     | 19.0 | 10 28         | 1 34.16                       | + 8 39.3        | 1.319          | 2.304     | 4.2     | 18.9 |
| 11 7          | 1 28.99                       | + 3 27.9        | 1.459          | 2.400    | 9.5     | 19.2 | 11 7          | 1 25.29                       | + 7 48.1        | 1.375          | 2.323     | 9.3     | 19.2 |
| 11 17         | 1 24.02                       | + 3 21.9        | 1.528          | 2.409    | 13.4    | 19.5 | 11 17         | 1 18.78                       | + 7 11.4        | 1.454          | 2.341     | 13.6    | 19.5 |
| 11 27         | 1 21.52                       | + 3 33.1        | 1.618          | 2.419    | 16.7    | 19.8 | 11 27         | 1 15.17                       | + 6 52.5        | 1.555          | 2.358     | 17.2    | 19.8 |
| <b>511908</b> | 2015 <i>HU</i> <sub>67</sub>  |                 | 10 20.6 64°87  | 0°8/20.0 | 18      |      | <b>11478</b>  | 1985 <i>CD</i>                |                 | 10 20.6 175°82 | 5°8/14.6  | 18      |      |
| 9 18          | 2 10.01                       | + 9 55.5        | 1.514          | 2.384    | 15.2    | 21.3 | 9 18          | 2 4.29                        | - 3 37.5        | 2.027          | 2.905     | 11.6    | 17.5 |
| 9 28          | 2 3.19                        | + 9 33.2        | 1.478          | 2.414    | 10.9    | 21.1 | 9 28          | 1 58.90                       | - 5 8.0         | 1.974          | 2.907     | 8.7     | 17.3 |
| 10 8          | 1 54.27                       | + 9 2.1         | 1.466          | 2.444    | 6.1     | 20.9 | 10 8          | 1 51.85                       | - 6 36.2        | 1.945          | 2.909     | 6.4     | 17.2 |
| 10 18         | 1 44.27                       | + 8 27.0        | 1.479          | 2.475    | 1.3     | 20.7 | 10 18         | 1 43.83                       | - 7 54.7        | 1.945          | 2.910     | 6.0     | 17.1 |
| 10 28         | 1 34.44                       | + 7 53.4        | 1.521          | 2.505    | 4.0     | 21.0 | 10 28         | 1 35.69                       | - 8 56.6        | 1.973          | 2.910     | 7.9     | 17.3 |
| 11 7          | 1 25.93                       | + 7 27.1        | 1.589          | 2.535    | 8.5     | 21.3 | 11 7          | 1 28.34                       | - 9 37.1        | 2.027          | 2.910     | 10.6    | 17.4 |
| 11 17         | 1 19.56                       | + 7 12.2        | 1.683          | 2.564    | 12.4    | 21.6 | 11 17         | 1 22.47                       | - 9 54.6        | 2.105          | 2.910     | 13.3    | 17.6 |
| 11 27         | 1 15.81                       | + 7 10.9        | 1.798          | 2.594    | 15.5    | 21.9 | 11 27         | 1 18.61                       | - 9 49.6        | 2.202          | 2.909     | 15.6    | 17.8 |
| <b>364584</b> | 2007 <i>RL</i> <sub>116</sub> |                 | 10 20.6 34°19  | 1°7/19.5 | 17      |      | <b>170942</b> | 2005 <i>AN</i> <sub>51</sub>  |                 | 10 20.6 248°92 | 5°0/24.5  | 18      |      |
| 9 18          | 2 2.84                        | +12 18.7        | 0.853          | 1.759    | 20.4    | 19.2 | 9 18          | 2 7.87                        | +25 2.2         | 1.521          | 2.347     | 17.4    | 20.2 |
| 9 28          | 1 59.10                       | +10 58.8        | 0.824          | 1.778    | 14.6    | 18.9 | 9 28          | 2 2.44                        | +24 58.4        | 1.439          | 2.338     | 13.9    | 19.9 |
| 10 8          | 1 52.31                       | + 9 20.7        | 0.813          | 1.798    | 8.1     | 18.7 | 10 8          | 1 54.33                       | +24 29.6        | 1.378          | 2.329     | 9.8     | 19.7 |
| 10 18         | 1 43.88                       | + 7 36.3        | 0.824          | 1.819    | 2.0     | 18.4 | 10 18         | 1 44.40                       | +23 35.2        | 1.340          | 2.319     | 6.1     | 19.4 |
| 10 28         | 1 35.60                       | + 6 0.0         | 0.857          | 1.842    | 5.9     | 18.8 | 10 28         | 1 34.00                       | +22 19.1        | 1.328          | 2.308     | 5.4     | 19.4 |
| 11 7          | 1 29.10                       | + 4 44.7        | 0.912          | 1.866    | 11.9    | 19.2 | 11 7          | 1 24.60                       | +20 50.2        | 1.343          | 2.298     | 8.7     | 19.5 |
| 11 17         | 1 25.41                       | + 3 57.3        | 0.988          | 1.891    | 16.9    | 19.6 | 11 17         | 1 17.42                       | +19 19.2        | 1.383          | 2.287     | 12.9    | 19.8 |
| 11 27         | 1 25.00                       | + 3 39.4        | 1.080          | 1.916    | 21.0    | 19.9 | 11 27         | 1 13.26                       | +17 57.1        | 1.445          | 2.276     | 16.9    | 20.0 |
| <b>465038</b> | 2006 <i>QP</i> <sub>26</sub>  |                 | 10 20.6 76°35  | 9°9/11.9 | 16      |      | <b>516895</b> | 2011 <i>RP</i> <sub>18</sub>  |                 | 10 20.6 300°13 | 2°3/22.1  | 18      |      |
| 9 18          | 2 7.12                        | - 6 56.9        | 1.308          | 2.199    | 15.7    | 20.8 | 9 18          | 2 9.06                        | +16 4.6         | 1.752          | 2.600     | 14.5    | 21.0 |
| 9 28          | 2 1.23                        | - 9 46.9        | 1.294          | 2.228    | 12.3    | 20.6 | 9 28          | 2 2.94                        | +16 30.1        | 1.671          | 2.591     | 11.0    | 20.8 |
| 10 8          | 1 53.17                       | -12 23.5        | 1.304          | 2.257    | 10.1    | 20.6 | 10 8          | 1 54.47                       | +16 43.9        | 1.614          | 2.582     | 6.9     | 20.5 |
| 10 18         | 1 44.04                       | -14 32.5        | 1.340          | 2.285    | 10.3    | 20.7 | 10 18         | 1 44.43                       | +16 46.0        | 1.582          | 2.572     | 3.0     | 20.3 |
| 10 28         | 1 35.16                       | -16 4.0         | 1.401          | 2.313    | 12.6    | 20.9 | 10 28         | 1 33.93                       | +16 38.6        | 1.578          | 2.563     | 3.6     | 20.3 |
| 11 7          | 1 27.71                       | -16 54.5        | 1.485          | 2.341    | 15.4    | 21.2 | 11 7          | 1 24.24                       | +16 26.0        | 1.602          | 2.555     | 7.8     | 20.5 |
| 11 17         | 1 22.49                       | -17 6.7         | 1.588          | 2.368    | 18.0    | 21.4 | 11 17         | 1 16.41                       | +16 13.5        | 1.652          | 2.546     | 11.8    | 20.7 |
| 11 27         | 1 19.92                       | -16 46.1        | 1.707          | 2.395    | 20.1    | 21.7 | 11 27         | 1 11.20                       | +16 6.3         | 1.725          | 2.537     | 15.4    | 21.0 |
| <b>470073</b> | 2006 <i>SM</i> <sub>310</sub> |                 | 10 20.6 313°40 | 2°9/22.3 | 18      |      | <b>426208</b> | 2012 <i>KP</i> <sub>35</sub>  |                 |                |           |         |      |

EPHEMERIDES

10 20.6

10 20.6

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$     | $\beta$   | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$     | $\beta$   | $V$  |
|---------------|-------------------------------|-----------------|----------|---------|-----------|------|---------------|-------------------------------|-----------------|----------|---------|-----------|------|
| <b>483370</b> | 2016 <i>SF</i> <sub>18</sub>  |                 | 10 20.6  | 63°28'  | 3°9'/23.4 | 18   | <b>374261</b> | 2005 <i>JX</i> <sub>64</sub>  |                 | 10 20.6  | 239°66' | 2°0'/19.1 | 17   |
| 9 18          | 2 8.42                        | +21 9.8         | 1.470    | 2.313   | 17.1      | 20.8 | 9 18          | 2 7.37                        | +8 28.3         | 1.591    | 2.465   | 14.4      | 22.0 |
| 9 28          | 2 2.56                        | +21 16.9        | 1.413    | 2.325   | 13.1      | 20.5 | 9 28          | 2 1.73                        | +7 39.7         | 1.517    | 2.456   | 10.4      | 21.7 |
| 10 8          | 1 54.21                       | +21 3.5         | 1.377    | 2.338   | 8.8       | 20.3 | 10 8          | 1 53.78                       | +6 41.2         | 1.466    | 2.446   | 5.9       | 21.4 |
| 10 18         | 1 44.35                       | +20 30.7        | 1.366    | 2.351   | 4.8       | 20.1 | 10 18         | 1 44.31                       | +5 38.2         | 1.441    | 2.436   | 2.1       | 21.2 |
| 10 28         | 1 34.35                       | +19 42.8        | 1.380    | 2.364   | 4.5       | 20.2 | 10 28         | 1 34.50                       | +4 38.3         | 1.444    | 2.425   | 5.0       | 21.3 |
| 11 7          | 1 25.56                       | +18 47.7        | 1.421    | 2.377   | 8.2       | 20.4 | 11 7          | 1 25.60                       | +3 48.9         | 1.474    | 2.414   | 9.6       | 21.6 |
| 11 17         | 1 19.02                       | +17 53.8        | 1.488    | 2.390   | 12.3      | 20.7 | 11 17         | 1 18.62                       | +3 15.7         | 1.529    | 2.402   | 13.9      | 21.8 |
| 11 27         | 1 15.38                       | +17 8.7         | 1.575    | 2.403   | 15.9      | 21.0 | 11 27         | 1 14.29                       | +3 2.0          | 1.604    | 2.390   | 17.5      | 22.0 |
| <b>218173</b> | 2002 <i>SL</i> <sub>45</sub>  |                 | 10 20.6  | 338°87' | 1°6'/21.5 | 18   | <b>469798</b> | 2005 <i>SL</i> <sub>12</sub>  |                 | 10 20.6  | 23°91'  | 4°0'/23.2 | 18   |
| 9 18          | 2 8.95                        | +13 47.8        | 1.287    | 2.159   | 17.2      | 19.5 | 9 18          | 2 4.79                        | +19 55.3        | 1.039    | 1.914   | 20.2      | 19.9 |
| 9 28          | 2 3.39                        | +14 7.1         | 1.219    | 2.153   | 12.9      | 19.3 | 9 28          | 2 0.54                        | +20 7.0         | 0.995    | 1.925   | 15.5      | 19.7 |
| 10 8          | 1 54.95                       | +14 13.2        | 1.172    | 2.148   | 7.8       | 19.0 | 10 8          | 1 53.28                       | +19 54.0        | 0.969    | 1.938   | 10.1      | 19.4 |
| 10 18         | 1 44.55                       | +14 7.3         | 1.149    | 2.143   | 2.5       | 18.6 | 10 18         | 1 44.19                       | +19 18.1        | 0.964    | 1.952   | 5.2       | 19.2 |
| 10 28         | 1 33.70                       | +13 53.3        | 1.151    | 2.139   | 4.1       | 18.7 | 10 28         | 1 34.98                       | +18 25.7        | 0.982    | 1.968   | 5.0       | 19.3 |
| 11 7          | 1 23.97                       | +13 37.2        | 1.179    | 2.135   | 9.5       | 19.0 | 11 7          | 1 27.31                       | +17 27.3        | 1.023    | 1.985   | 9.6       | 19.6 |
| 11 17         | 1 16.68                       | +13 25.7        | 1.230    | 2.132   | 14.4      | 19.3 | 11 17         | 1 22.37                       | +16 33.5        | 1.087    | 2.003   | 14.5      | 19.9 |
| 11 27         | 1 12.64                       | +13 24.4        | 1.301    | 2.129   | 18.5      | 19.6 | 11 27         | 1 20.81                       | +15 52.7        | 1.169    | 2.022   | 18.6      | 20.2 |
| <b>121258</b> | 1999 <i>RL</i> <sub>94</sub>  |                 | 10 20.6  | 108°33' | 0°9'/21.4 | 18   | <b>97248</b>  | 1999 <i>XO</i> <sub>106</sub> |                 | 10 20.6  | 11°12'  | 7°4'/27.4 | 18   |
| 9 18          | 2 6.35                        | +13 57.0        | 2.211    | 3.059   | 11.9      | 19.5 | 9 18          | 1 59.53                       | +30 59.1        | 1.215    | 2.043   | 20.8      | 17.8 |
| 9 28          | 2 0.36                        | +13 56.7        | 2.144    | 3.066   | 8.8       | 19.3 | 9 28          | 1 56.69                       | +30 46.0        | 1.155    | 2.046   | 17.1      | 17.6 |
| 10 8          | 1 52.70                       | +13 47.3        | 2.101    | 3.073   | 5.2       | 19.1 | 10 8          | 1 51.08                       | +29 56.5        | 1.112    | 2.051   | 13.0      | 17.4 |
| 10 18         | 1 44.03                       | +13 30.4        | 2.086    | 3.080   | 1.6       | 18.8 | 10 18         | 1 43.74                       | +28 30.2        | 1.090    | 2.058   | 9.1       | 17.2 |
| 10 28         | 1 35.22                       | +13 9.2         | 2.100    | 3.087   | 2.7       | 18.9 | 10 28         | 1 36.19                       | +26 33.9        | 1.091    | 2.065   | 7.4       | 17.1 |
| 11 7          | 1 27.14                       | +12 47.7        | 2.144    | 3.093   | 6.3       | 19.2 | 11 7          | 1 29.93                       | +24 20.5        | 1.116    | 2.075   | 9.5       | 17.3 |
| 11 17         | 1 20.53                       | +12 29.8        | 2.215    | 3.100   | 9.7       | 19.4 | 11 17         | 1 26.11                       | +22 5.6         | 1.165    | 2.085   | 13.3      | 17.5 |
| 11 27         | 1 15.91                       | +12 19.1        | 2.310    | 3.107   | 12.5      | 19.6 | 11 27         | 1 25.37                       | +20 3.2         | 1.235    | 2.097   | 17.2      | 17.8 |
| <b>226312</b> | 2003 <i>CN</i> <sub>12</sub>  |                 | 10 20.6  | 309°62' | 1°0'/21.2 | 18   | <b>120069</b> | 2003 <i>DZ</i> <sub>3</sub>   |                 | 10 20.6  | 340°51' | 0°1'/20.7 | 18   |
| 9 18          | 2 5.72                        | +13 58.7        | 1.343    | 2.217   | 16.5      | 20.8 | 9 18          | 2 1.93                        | +11 57.4        | 1.062    | 1.959   | 18.1      | 18.7 |
| 9 28          | 2 1.14                        | +13 51.6        | 1.259    | 2.195   | 12.4      | 20.4 | 9 28          | 1 58.71                       | +11 50.4        | 0.994    | 1.942   | 13.4      | 18.4 |
| 10 8          | 1 53.75                       | +13 29.3        | 1.195    | 2.172   | 7.5       | 20.1 | 10 8          | 1 52.47                       | +11 28.4        | 0.945    | 1.926   | 7.9       | 18.1 |
| 10 18         | 1 44.34                       | +12 53.9        | 1.155    | 2.150   | 2.1       | 19.7 | 10 18         | 1 44.09                       | +10 55.0        | 0.917    | 1.912   | 1.7       | 17.6 |
| 10 28         | 1 34.25                       | +12 10.8        | 1.141    | 2.128   | 4.1       | 19.8 | 10 28         | 1 35.12                       | +10 17.4        | 0.912    | 1.900   | 4.7       | 17.8 |
| 11 7          | 1 25.01                       | +11 27.9        | 1.152    | 2.107   | 9.7       | 20.1 | 11 7          | 1 27.27                       | +9 44.4         | 0.930    | 1.889   | 10.8      | 18.1 |
| 11 17         | 1 17.96                       | +10 53.2        | 1.186    | 2.087   | 14.9      | 20.3 | 11 17         | 1 21.94                       | +9 24.0         | 0.969    | 1.880   | 16.4      | 18.4 |
| 11 27         | 1 14.07                       | +10 33.3        | 1.239    | 2.067   | 19.3      | 20.5 | 11 27         | 1 20.06                       | +9 21.8         | 1.026    | 1.873   | 21.0      | 18.6 |
| <b>116154</b> | 2003 <i>WA</i> <sub>168</sub> |                 | 10 20.6  | 28°55'  | 9°1'/14.3 | 18   | <b>362772</b> | 2011 <i>WD</i> <sub>90</sub>  |                 | 10 20.6  | 321°96' | 2°9'/18.4 | 18   |
| 9 18          | 2 7.08                        | -14 20.6        | 1.742    | 2.610   | 13.6      | 17.8 | 9 18          | 2 4.51                        | +4 30.6         | 1.663    | 2.545   | 13.4      | 20.8 |
| 9 28          | 2 0.96                        | -15 0.5         | 1.710    | 2.623   | 11.2      | 17.7 | 9 28          | 1 59.56                       | +3 58.7         | 1.591    | 2.533   | 9.7       | 20.6 |
| 10 8          | 1 53.01                       | -15 25.6        | 1.700    | 2.636   | 9.5       | 17.6 | 10 8          | 1 52.49                       | +3 22.5         | 1.542    | 2.521   | 5.7       | 20.3 |
| 10 18         | 1 44.08                       | -15 29.6        | 1.715    | 2.651   | 9.2       | 17.6 | 10 18         | 1 44.05                       | +2 47.2         | 1.519    | 2.510   | 3.0       | 20.1 |
| 10 28         | 1 35.25                       | -15 8.7         | 1.756    | 2.666   | 10.6      | 17.7 | 10 28         | 1 35.29                       | +2 18.7         | 1.523    | 2.499   | 5.4       | 20.2 |
| 11 7          | 1 27.51                       | -14 22.8        | 1.820    | 2.681   | 12.8      | 17.9 | 11 7          | 1 27.36                       | +2 2.3          | 1.554    | 2.489   | 9.6       | 20.5 |
| 11 17         | 1 21.63                       | -13 14.4        | 1.907    | 2.698   | 15.0      | 18.1 | 11 17         | 1 21.17                       | +2 1.5          | 1.608    | 2.479   | 13.5      | 20.7 |
| 11 27         | 1 18.04                       | -11 47.6        | 2.013    | 2.714   | 17.1      | 18.3 | 11 27         | 1 17.42                       | +2 17.9         | 1.684    | 2.470   | 16.8      | 20.9 |
| <b>198486</b> | 2004 <i>XV</i> <sub>51</sub>  |                 | 10 20.6  | 213°55' | 12°1'/3.8 | 18   | <b>209244</b> | 2003 <i>WX</i> <sub>119</sub> |                 | 10 20.6  | 349°05' | 1°5'/19.6 | 18   |
| 9 18          | 2 19.95                       | +52 19.7        | 2.637    | 3.213   | 16.3      | 20.5 | 9 18          | 2 5.59                        | +7 54.0         | 1.463    | 2.345   | 14.9      | 19.5 |
| 9 28          | 2 11.51                       | +53 45.6        | 2.544    | 3.206   | 15.1      | 20.4 | 9 28          | 2 0.54                        | +7 39.0         | 1.398    | 2.340   | 10.8      | 19.3 |
| 10 8          | 1 59.81                       | +54 46.8        | 2.469    | 3.197   | 14.0      | 20.3 | 10 8          | 1 53.12                       | +7 16.8         | 1.355    | 2.336   | 6.2       | 19.0 |
| 10 18         | 1 45.65                       | +55 16.6        | 2.412    | 3.188   | 12.9      | 20.2 | 10 18         | 1 44.18                       | +6 51.4         | 1.337    | 2.332   | 1.8       | 18.7 |
| 10 28         | 1 30.51                       | +55 10.9        | 2.376    | 3.178   | 12.3      | 20.1 | 10 28         | 1 34.96                       | +6 28.6         | 1.346    | 2.329   | 4.6       | 18.9 |
| 11 7          | 1 16.16                       | +54 30.6        | 2.363    | 3.168   | 12.1      | 20.1 | 11 7          | 1 26.72                       | +6 14.1         | 1.380    | 2.327   | 9.4       | 19.2 |
| 11 17         | 1 4.19                        | +53 21.4        | 2.373    | 3.156   | 12.6      | 20.1 | 11 17         | 1 20.51                       | +6 12.0         | 1.439    | 2.325   | 13.7      | 19.4 |
| 11 27         | 0 55.68                       | +51 52.5        | 2.404    | 3.145   | 13.6      | 20.2 | 11 27         | 1 17.01                       | +6 24.9         | 1.517    | 2.324   | 17.4      | 19.7 |
| <b>436054</b> | 2009 <i>RC</i> <sub>14</sub>  |                 | 10 20.6  | 304°13' | 1°8'/19.2 | 18   | <b>516124</b> | 2015 <i>UC</i> <sub>59</sub>  |                 | 10 20.6  | 83°22'  | 3°4'/16.9 | 18   |
| 9 18          | 2 3.89                        | +10 15.3        | 1.418    | 2.300   | 15.3      | 21.0 | 9 18          | 2 1.93                        | +3 1.6          | 2.142    | 3.020   | 11.0      | 21.0 |
| 9 28          | 1 59.37                       | +9 9.9          | 1.349    | 2.292   | 11.1      | 20.7 | 9 28          | 1 57.09                       | +1 49.2         | 2.092    | 3.032   | 7.9       | 20.9 |
| 10 8          | 1 52.46                       | +7 50.7         | 1.303    | 2.284   | 6.3       | 20.5 | 10 8          | 1 50.79                       | +0 34.4         | 2.067    | 3.044   | 4.9       | 20.7 |
| 10 18         | 1 44.02                       | +6 24.5         | 1.281    | 2.276   | 1.9       | 20.2 | 10 18         | 1 43.65                       | -0 36.8         | 2.071    | 3.055   | 3.4       | 20.6 |
| 10 28         | 1 35.28                       | +5 0.8          | 1.287    | 2.269   | 5.1       | 20.4 | 10 28         | 1 36.48                       | -1 38.5         | 2.103    | 3.067   | 5.4       | 20.8 |
| 11 7          | 1 27.52                       | +3 49.3         | 1.318    | 2.261   | 10.1      | 20.6 | 11 7          | 1 30.05                       | -2 25.7         | 2.163    | 3.079   | 8.4       | 21.0 |
| 11 17         | 1 21.79                       | +2 57.0         | 1.373    | 2.254   | 14.6      | 20.9 | 11 17         | 1 24.99                       | -2 55.7         | 2.249    | 3.091   | 11.3      | 21.2 |
| 11 27         | 1 18.78                       | +2 28.1         | 1.447    | 2.247   | 18.4      | 21.1 | 11 27         | 1 21.74                       | -3 7.5          | 2.356    | 3.102   | 13.7      | 21.4 |
| <b>254510</b> | 2005 <i>EA</i> <sub>85</sub>  |                 | 10 20.6  | 218°29' | 3°2'/18.3 | 18   | <b>365398</b> | 2009 <i>WT</i> <sub>62</sub>  |                 | 10 20.6  | 35°20'  | 2°5'/23.6 | 18   |
| 9 18          | 2 9.54                        | +4 12.7         | 1.699    | 2.573   | 13.7      | 20.5 | 9 18          | 2 1.11                        | +22 40.1        | 2.222    | 3.046   | 12.7      | 20.6 |
| 9 28          | 2 3.13                        | +3 31.1         | 1.628    | 2.565   | 9.9       | 20.2 | 9 28          | 1 56.64                       | +21 52.4        | 2.146    | 3.049   | 9.8       | 20.4 |
| 10 8          | 1 54.50                       | +2 45.0         | 1.580    | 2.558   | 5.9       | 20.0 | 10 8          | 1 50.60                       | +20 46.9        | 2.094    | 3.052   | 6.5       | 20.2 |
| 10 18         | 1 44.45                       | +2 0.0          | 1.559    | 2.549   | 3.2       | 19.8 | 10 18         | 1 43.63                       | +19 26.3        | 2.069    | 3.055   | 3.3       | 20.0 |
| 10 28         | 1 34.09                       | +1 22.5         | 1.567    | 2.540   | 5.7       | 20.0 | 10 28         | 1 36.54                       | +17 55.8        | 2.074    | 3.058   | 3.0       | 20.0 |
| 11 7          | 1 24.64                       | +0 58.1         | 1.601    | 2.530   | 9.8       | 20.2 | 11 7          | 1 30.16                       | +16 22.3        | 2.108    | 3.062   | 6.0       | 20.2 |
| 11 17         | 1 17.06                       | +0 50.4         | 1.661    | 2.520   | 13.7      | 20.4 | 11 17         | 1 25.19                       | +14 53.0        | 2.169    | 3.065   | 9.3       | 20.4 |
| 11 27         | 1 12.03                       | +1 1.0          | 1.741    | 2.509   | 17.0      | 20.6 | 11 27         | 1 22.10                       | +13 34.0        | 2.256    | 3.069   | 12.2      | 20.6 |
| <b>477786</b> | 2011 <i>BS</i> <sub>57</sub>  |                 | 10 20.6  | 139°19' | 1°3'/21.6 | 16   | <b>356760</b> | 2011 <i>UU</i> <sub>254</sub> |                 | 10 20.6  | 352°91' | 0°9'/21.4 | 18   |

EPHEMERIDES

10 20.6

10 20.7

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$       | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$       | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------------|-----------|---------|------|---------------|-------------------------------|-----------------|----------------|-----------|---------|------|
| <b>374198</b> | 2005 <i>EU</i> <sub>43</sub>  |                 | 10 20.6 220°99 | 1.8°/22.0 | 18      |      | <b>166408</b> | 2002 <i>NU</i> <sub>61</sub>  |                 | 10 20.6 105°25 | 1.5°/19.3 | 18      |      |
| 9 18          | 2 8.03                        | +17 33.9        | 1.570          | 2.422     | 15.7    | 21.4 | 9 18          | 2 6.09                        | +8 40.0         | 1.924          | 2.791     | 12.6    | 20.8 |
| 9 28          | 2 2.32                        | +17 12.3        | 1.495          | 2.417     | 11.8    | 21.1 | 9 28          | 2 0.24                        | +7 55.4         | 1.871          | 2.807     | 9.0     | 20.6 |
| 10 8          | 1 54.16                       | +16 32.8        | 1.442          | 2.412     | 7.4     | 20.8 | 10 8          | 1 52.66                       | +7 3.8          | 1.843          | 2.822     | 5.1     | 20.4 |
| 10 18         | 1 44.42                       | +15 37.7        | 1.414          | 2.406     | 2.8     | 20.6 | 10 18         | 1 44.10                       | +6 9.9          | 1.843          | 2.837     | 1.6     | 20.2 |
| 10 28         | 1 34.33                       | +14 32.8        | 1.414          | 2.401     | 3.6     | 20.6 | 10 28         | 1 35.52                       | +5 19.5         | 1.872          | 2.852     | 4.0     | 20.4 |
| 11 7          | 1 25.22                       | +13 26.2        | 1.441          | 2.394     | 8.3     | 20.9 | 11 7          | 1 27.85                       | +4 37.9         | 1.929          | 2.867     | 7.8     | 20.7 |
| 11 17         | 1 18.16                       | +12 26.3        | 1.493          | 2.388     | 12.8    | 21.1 | 11 17         | 1 21.81                       | +4 9.1          | 2.012          | 2.881     | 11.2    | 20.9 |
| 11 27         | 1 13.88                       | +11 39.8        | 1.567          | 2.381     | 16.6    | 21.3 | 11 27         | 1 17.89                       | +3 55.3         | 2.117          | 2.895     | 14.1    | 21.1 |
| <b>192167</b> | 2007 <i>DQ</i> <sub>18</sub>  |                 | 10 20.6 108°23 | 2°1/22.2  | 18      |      | <b>344789</b> | 2003 <i>XU</i> <sub>38</sub>  |                 | 10 20.6 11°13  | 11°0/16.4 | 18      |      |
| 9 18          | 2 8.90                        | +17 34.7        | 1.679          | 2.525     | 15.1    | 20.3 | 9 18          | 2 9.28                        | -12 48.1        | 1.070          | 1.962     | 18.3    | 18.5 |
| 9 28          | 2 2.63                        | +17 27.5        | 1.618          | 2.537     | 11.3    | 20.1 | 9 28          | 2 3.49                        | -13 5.0         | 1.035          | 1.967     | 14.8    | 18.3 |
| 10 8          | 1 54.17                       | +17 4.6         | 1.580          | 2.548     | 7.1     | 19.8 | 10 8          | 1 54.83                       | -13 1.4         | 1.019          | 1.974     | 11.9    | 18.1 |
| 10 18         | 1 44.40                       | +16 28.2        | 1.568          | 2.559     | 2.9     | 19.6 | 10 18         | 1 44.57                       | -12 29.4        | 1.025          | 1.983     | 11.0    | 18.1 |
| 10 28         | 1 34.49                       | +15 42.9        | 1.584          | 2.570     | 3.4     | 19.7 | 10 28         | 1 34.38                       | -11 25.0        | 1.052          | 1.993     | 12.6    | 18.3 |
| 11 7          | 1 25.65                       | +14 55.3        | 1.628          | 2.581     | 7.6     | 20.0 | 11 7          | 1 25.84                       | -9 50.3         | 1.102          | 2.006     | 15.7    | 18.5 |
| 11 17         | 1 18.79                       | +14 12.1        | 1.697          | 2.591     | 11.6    | 20.2 | 11 17         | 1 20.01                       | -7 51.5         | 1.172          | 2.020     | 19.0    | 18.7 |
| 11 27         | 1 14.52                       | +13 38.9        | 1.789          | 2.601     | 14.9    | 20.5 | 11 27         | 1 17.45                       | -5 36.0         | 1.260          | 2.036     | 21.9    | 19.0 |
| <b>442244</b> | 2011 <i>OD</i> <sub>2</sub>   |                 | 10 20.6 160°34 | 6°0/26.8  | 18      |      | <b>233350</b> | 2006 <i>DT</i> <sub>61</sub>  |                 | 10 20.6 138°05 | 4°4/15.9  | 18      | R    |
| 9 18          | 2 8.26                        | +30 48.5        | 2.161          | 2.933     | 14.7    | 21.8 | 9 18          | 2 4.78                        | -0 13.7         | 2.202          | 3.075     | 11.0    | 20.4 |
| 9 28          | 2 2.05                        | +30 58.3        | 2.083          | 2.939     | 12.1    | 21.7 | 9 28          | 1 59.11                       | -1 33.3         | 2.153          | 3.088     | 8.0     | 20.3 |
| 10 8          | 1 53.82                       | +30 46.6        | 2.026          | 2.943     | 9.3     | 21.5 | 10 8          | 1 51.95                       | -2 52.9         | 2.130          | 3.100     | 5.3     | 20.1 |
| 10 18         | 1 44.34                       | +30 12.3        | 1.995          | 2.948     | 6.9     | 21.4 | 10 18         | 1 43.95                       | -4 6.0          | 2.136          | 3.112     | 4.5     | 20.1 |
| 10 28         | 1 34.63                       | +29 17.3        | 1.991          | 2.952     | 6.0     | 21.3 | 10 28         | 1 35.93                       | -5 6.6          | 2.171          | 3.123     | 6.3     | 20.2 |
| 11 7          | 1 25.77                       | +28 7.1         | 2.015          | 2.955     | 7.4     | 21.4 | 11 7          | 1 28.68                       | -5 50.4         | 2.234          | 3.133     | 9.0     | 20.4 |
| 11 17         | 1 18.65                       | +26 49.3        | 2.067          | 2.958     | 9.9     | 21.6 | 11 17         | 1 22.83                       | -6 15.1         | 2.322          | 3.143     | 11.7    | 20.6 |
| 11 27         | 1 13.88                       | +25 32.0        | 2.143          | 2.960     | 12.6    | 21.8 | 11 27         | 1 18.83                       | -6 20.6         | 2.432          | 3.152     | 14.0    | 20.8 |
| <b>44012</b>  | 1997 <i>UL</i> <sub>22</sub>  |                 | 10 20.6 65°70  | 3°1/18.6  | 18      |      | <b>485793</b> | 2012 <i>DP</i> <sub>23</sub>  |                 | 10 20.6 159°63 | 3°3/24.3  | 18      |      |
| 9 18          | 2 8.42                        | +6 24.8         | 1.207          | 2.097     | 16.9    | 18.3 | 9 18          | 2 6.24                        | +23 35.0        | 2.874          | 3.671     | 10.8    | 22.1 |
| 9 28          | 2 2.67                        | +5 33.0         | 1.164          | 2.109     | 12.1    | 18.1 | 9 28          | 2 0.11                        | +23 48.9        | 2.795          | 3.677     | 8.5     | 21.9 |
| 10 8          | 1 54.30                       | +4 33.9         | 1.141          | 2.122     | 6.9     | 17.8 | 10 8          | 1 52.55                       | +23 50.3        | 2.740          | 3.682     | 6.0     | 21.8 |
| 10 18         | 1 44.43                       | +3 35.2         | 1.143          | 2.135     | 3.2     | 17.7 | 10 18         | 1 44.10                       | +23 39.3        | 2.713          | 3.686     | 3.8     | 21.7 |
| 10 28         | 1 34.54                       | +2 45.9         | 1.170          | 2.149     | 6.2     | 17.9 | 10 28         | 1 35.47                       | +23 17.6        | 2.716          | 3.691     | 3.5     | 21.6 |
| 11 7          | 1 26.08                       | +2 13.1         | 1.222          | 2.162     | 11.1    | 18.2 | 11 7          | 1 27.40                       | +22 48.1        | 2.749          | 3.695     | 5.3     | 21.8 |
| 11 17         | 1 20.06                       | +2 1.0          | 1.296          | 2.175     | 15.5    | 18.5 | 11 17         | 1 20.53                       | +22 15.1        | 2.811          | 3.698     | 7.8     | 21.9 |
| 11 27         | 1 17.08                       | +2 10.5         | 1.390          | 2.189     | 19.1    | 18.8 | 11 27         | 1 15.34                       | +21 42.9        | 2.899          | 3.701     | 10.1    | 22.1 |
| <b>53746</b>  | 2000 <i>EM</i> <sub>57</sub>  |                 | 10 20.6 195°58 | 0°2/20.8  | 18      |      | <b>53817</b>  | 2000 <i>EO</i> <sub>138</sub> |                 | 10 20.6 94°86  | 3°0/18.5  | 18      |      |
| 9 18          | 2 7.50                        | +13 28.2        | 1.833          | 2.688     | 13.6    | 20.6 | 9 18          | 2 10.80                       | +1 48.3         | 1.979          | 2.845     | 12.3    | 19.0 |
| 9 28          | 2 1.56                        | +12 57.0        | 1.759          | 2.687     | 10.0    | 20.4 | 9 28          | 2 3.54                        | +1 39.6         | 1.929          | 2.862     | 8.9     | 18.8 |
| 10 8          | 1 53.58                       | +12 13.5        | 1.709          | 2.685     | 5.8     | 20.2 | 10 8          | 1 54.51                       | +1 30.8         | 1.904          | 2.879     | 5.3     | 18.6 |
| 10 18         | 1 44.31                       | +11 21.0        | 1.687          | 2.682     | 1.3     | 19.9 | 10 18         | 1 44.49                       | +1 25.7         | 1.908          | 2.896     | 3.0     | 18.5 |
| 10 28         | 1 34.80                       | +10 25.3        | 1.693          | 2.678     | 3.3     | 20.0 | 10 28         | 1 34.49                       | +1 27.7         | 1.940          | 2.913     | 4.9     | 18.7 |
| 11 7          | 1 26.15                       | +9 32.7         | 1.727          | 2.675     | 7.7     | 20.3 | 11 7          | 1 25.45                       | +1 39.5         | 2.002          | 2.929     | 8.3     | 18.9 |
| 11 17         | 1 19.24                       | +8 49.1         | 1.788          | 2.670     | 11.7    | 20.5 | 11 17         | 1 18.14                       | +2 2.3          | 2.090          | 2.945     | 11.5    | 19.2 |
| 11 27         | 1 14.70                       | +8 19.2         | 1.871          | 2.666     | 15.0    | 20.7 | 11 27         | 1 13.05                       | +2 36.5         | 2.201          | 2.961     | 14.2    | 19.4 |
| <b>390926</b> | 2005 <i>ED</i> <sub>331</sub> |                 | 10 20.6 155°96 | 4°9/15.4  | 18      |      | <b>158284</b> | 2001 <i>UF</i> <sub>46</sub>  |                 | 10 20.6 334°30 | 0°1/20.6  | 18      |      |
| 9 18          | 2 4.84                        | -3 8.8          | 2.310          | 3.182     | 10.6    | 21.8 | 9 18          | 2 3.41                        | +12 47.7        | 1.269          | 2.152     | 16.7    | 19.5 |
| 9 28          | 1 59.13                       | -4 17.5         | 2.258          | 3.189     | 7.9     | 21.6 | 9 28          | 1 59.37                       | +12 20.6        | 1.199          | 2.140     | 12.3    | 19.2 |
| 10 8          | 1 51.96                       | -5 23.8         | 2.231          | 3.196     | 5.6     | 21.5 | 10 8          | 1 52.67                       | +11 37.8        | 1.150          | 2.130     | 7.2     | 18.9 |
| 10 18         | 1 43.95                       | -6 22.0         | 2.234          | 3.202     | 5.0     | 21.5 | 10 18         | 1 44.18                       | +10 43.6        | 1.124          | 2.119     | 1.5     | 18.5 |
| 10 28         | 1 35.89                       | -7 6.9          | 2.265          | 3.208     | 6.6     | 21.6 | 10 28         | 1 35.26                       | +9 45.8         | 1.123          | 2.110     | 4.3     | 18.7 |
| 11 7          | 1 28.54                       | -7 34.7         | 2.324          | 3.214     | 9.2     | 21.8 | 11 7          | 1 27.37                       | +8 53.2         | 1.147          | 2.102     | 9.8     | 19.0 |
| 11 17         | 1 22.53                       | -7 44.1         | 2.408          | 3.218     | 11.7    | 22.0 | 11 17         | 1 21.71                       | +8 13.8         | 1.194          | 2.094     | 14.8    | 19.2 |
| 11 27         | 1 18.33                       | -7 35.2         | 2.513          | 3.222     | 13.8    | 22.1 | 11 27         | 1 19.07                       | +7 53.2         | 1.260          | 2.088     | 19.1    | 19.5 |
| <b>453472</b> | 2009 <i>SQ</i> <sub>191</sub> |                 | 10 20.6 31°16  | 0°1/20.5  | 18      |      | <b>431752</b> | 2008 <i>GZ</i> <sub>72</sub>  |                 | 10 20.6 59°76  | 1°0/19.9  | 16      |      |
| 9 18          | 2 1.29                        | +13 43.2        | 1.959          | 2.822     | 12.6    | 21.2 | 9 18          | 2 7.73                        | +11 3.5         | 1.286          | 2.166     | 16.7    | 21.0 |
| 9 28          | 1 56.87                       | +12 50.2        | 1.895          | 2.827     | 9.1     | 21.0 | 9 28          | 2 2.01                        | +10 20.9        | 1.245          | 2.186     | 12.0    | 20.8 |
| 10 8          | 1 50.79                       | +11 45.2        | 1.856          | 2.832     | 5.2     | 20.7 | 10 8          | 1 53.86                       | +9 26.2         | 1.225          | 2.206     | 6.8     | 20.6 |
| 10 18         | 1 43.71                       | +10 32.6        | 1.843          | 2.838     | 1.1     | 20.5 | 10 18         | 1 44.37                       | +8 25.6         | 1.230          | 2.226     | 1.5     | 20.3 |
| 10 28         | 1 36.53                       | +9 18.7         | 1.859          | 2.844     | 3.1     | 20.6 | 10 28         | 1 34.94                       | +7 27.6         | 1.262          | 2.246     | 4.5     | 20.6 |
| 11 7          | 1 30.11                       | +8 10.2         | 1.903          | 2.850     | 7.1     | 20.9 | 11 7          | 1 26.89                       | +6 39.9         | 1.318          | 2.267     | 9.5     | 20.9 |
| 11 17         | 1 25.19                       | +7 12.8         | 1.973          | 2.857     | 10.7    | 21.1 | 11 17         | 1 21.16                       | +6 8.3          | 1.399          | 2.287     | 13.9    | 21.2 |
| 11 27         | 1 22.26                       | +6 30.5         | 2.066          | 2.864     | 13.7    | 21.3 | 11 27         | 1 18.30                       | +5 55.5         | 1.499          | 2.308     | 17.5    | 21.5 |
| <b>24015</b>  | Pascalepinner                 |                 | 10 20.6 343°70 | 3°0/22.8  | 18      |      | <b>118568</b> | 2000 <i>GD</i>                |                 | 10 20.6 130°06 | 0°4/20.3  | 17      |      |
| 9 18          | 2 2.98                        | +20 11.5        | 1.189          | 2.057     | 18.6    | 18.1 | 9 18          | 2 8.08                        | +11 56.2        | 1.825          | 2.684     | 13.5    | 20.6 |
| 9 28          | 1 59.22                       | +19 44.6        | 1.122          | 2.050     | 14.3    | 17.8 | 9 28          | 2 1.82                        | +11 18.4        | 1.767          | 2.697     | 9.8     | 20.4 |
| 10 8          | 1 52.62                       | +18 51.8        | 1.074          | 2.044     | 9.2     | 17.5 | 10 8          | 1 53.63                       | +10 30.1        | 1.733          | 2.710     | 5.6     | 20.2 |
| 10 18         | 1 44.15                       | +17 35.6        | 1.049          | 2.039     | 4.2     | 17.2 | 10 18         | 1 44.34                       | +9 35.5         | 1.726          | 2.721     | 1.1     | 19.9 |
| 10 28         | 1 35.29                       | +16 4.0         | 1.048          | 2.035     | 4.3     | 17.2 | 10 28         | 1 34.97                       | +8 40.4         | 1.748          | 2.733     | 3.5     | 20.1 |
| 11 7          | 1 27.61                       | +14 29.2        | 1.071          | 2.032     | 9.5     | 17.5 | 11 7          | 1 26.58                       | +7 51.2         | 1.799          | 2.743     | 7.7     | 20.4 |
| 11 17         | 1 22.37                       | +13 3.3         | 1.117          | 2.029     | 14.6    | 17.8 | 11 17         | 1 19.97                       | +7 12.9         | 1.876          | 2.754     | 11.5    | 20.7 |
| 11 27         | 1 20.32                       | +11 55.9        | 1.183          | 2.027     | 19.0    | 18.1 | 11 27         | 1 15.68                       | +6 48.9         | 1.975          | 2.763     | 14.6    | 20.9 |
| <b>195395</b> | 2002 <i>GU</i> <sub>14</sub>  |                 | 10 20.6 140°75 | 0°3/20.9  | 18      |      | <b>384292</b> | 2009 <i>RU</i> <sub>15</sub>  |                 | 10 20.7 334°12 | 1°8/19.3  | 18      |      |
| 9 18          | 2 8.04                        | +13 4.6         |                |           |         |      |               |                               |                 |                |           |         |      |

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| 2020          | $\alpha_{2000}$        | $\delta_{2000}$             | $\Delta$ | $r$   | $\beta$ | $V$  | 2020          | $\alpha_{2000}$        | $\delta_{2000}$            | $\Delta$ | $r$   | $\beta$ | $V$  |
|---------------|------------------------|-----------------------------|----------|-------|---------|------|---------------|------------------------|----------------------------|----------|-------|---------|------|
| <b>487384</b> | 2014 QZ <sub>288</sub> | 10 20.7 319°71 10°1/10.1 18 |          |       |         |      | <b>514903</b> | 2008 SA <sub>135</sub> | 10 20.7 98°36 7°3/28.7 18  |          |       |         |      |
| 9 18          | 2 2.65                 | -16 34.6                    | 1.902    | 2.768 | 12.8    | 20.6 | 9 18          | 2 12.13                | +36 11.9                   | 2.640    | 3.358 | 13.6    | 21.4 |
| 9 28          | 1 58.04                | -18 0.5                     | 1.846    | 2.750 | 11.0    | 20.4 | 9 28          | 2 4.71                 | +37 6.7                    | 2.573    | 3.378 | 11.6    | 21.3 |
| 10 8          | 1 51.57                | -19 13.2                    | 1.814    | 2.733 | 10.1    | 20.3 | 10 8          | 1 55.34                | +37 41.7                   | 2.527    | 3.397 | 9.6     | 21.2 |
| 10 18         | 1 43.93                | -20 4.4                     | 1.806    | 2.716 | 10.5    | 20.3 | 10 18         | 1 44.75                | +37 54.4                   | 2.506    | 3.416 | 8.0     | 21.1 |
| 10 28         | 1 36.07                | -20 27.7                    | 1.821    | 2.699 | 12.1    | 20.4 | 10 28         | 1 33.91                | +37 44.7                   | 2.513    | 3.434 | 7.3     | 21.1 |
| 11 7          | 1 28.96                | -20 20.3                    | 1.860    | 2.683 | 14.2    | 20.5 | 11 7          | 1 23.85                | +37 15.7                   | 2.547    | 3.452 | 7.8     | 21.2 |
| 11 17         | 1 23.43                | -19 43.1                    | 1.917    | 2.667 | 16.4    | 20.6 | 11 17         | 1 15.41                | +36 32.7                   | 2.608    | 3.470 | 9.2     | 21.3 |
| 11 27         | 1 20.05                | -18 39.2                    | 1.992    | 2.652 | 18.4    | 20.8 | 11 27         | 1 9.22                 | +35 42.6                   | 2.694    | 3.488 | 11.0    | 21.5 |
| <b>377265</b> | 2004 DB <sub>7</sub>   | 10 20.7 224°20 3°9/23.5 18  |          |       |         |      | <b>352316</b> | 2007 US <sub>82</sub>  | 10 20.7 115°89 0°0/20.7 18 |          |       |         |      |
| 9 18          | 2 9.01                 | +21 27.1                    | 1.607    | 2.443 | 16.2    | 20.9 | 9 18          | 2 5.88                 | +12 21.3                   | 1.847    | 2.708 | 13.3    | 21.4 |
| 9 28          | 2 3.11                 | +21 35.7                    | 1.532    | 2.439 | 12.6    | 20.7 | 9 28          | 2 0.34                 | +11 58.7                   | 1.780    | 2.711 | 9.7     | 21.2 |
| 10 8          | 1 54.69                | +21 24.9                    | 1.477    | 2.436 | 8.6     | 20.5 | 10 8          | 1 52.88                | +11 25.8                   | 1.737    | 2.713 | 5.6     | 20.9 |
| 10 18         | 1 44.62                | +20 54.8                    | 1.448    | 2.432 | 4.8     | 20.2 | 10 18         | 1 44.23                | +10 45.8                   | 1.721    | 2.716 | 1.2     | 20.6 |
| 10 28         | 1 34.15                | +20 8.8                     | 1.445    | 2.428 | 4.5     | 20.2 | 10 28         | 1 35.39                | +10 3.6                    | 1.732    | 2.718 | 3.3     | 20.8 |
| 11 7          | 1 24.66                | +19 13.8                    | 1.470    | 2.424 | 8.2     | 20.4 | 11 7          | 1 27.40                | +9 25.0                    | 1.772    | 2.721 | 7.5     | 21.1 |
| 11 17         | 1 17.26                | +18 18.0                    | 1.520    | 2.420 | 12.3    | 20.7 | 11 17         | 1 21.10                | +8 54.8                    | 1.838    | 2.723 | 11.3    | 21.3 |
| 11 27         | 1 12.71                | +17 29.5                    | 1.592    | 2.415 | 16.0    | 20.9 | 11 27         | 1 17.06                | +8 37.0                    | 1.927    | 2.725 | 14.5    | 21.5 |
| <b>264372</b> | 2000 DK <sub>10</sub>  | 10 20.7 334°25 9°9/28.1 17  |          |       |         |      | <b>200493</b> | 2000 YW <sub>70</sub>  | 10 20.7 339°18 1°8/19.4 18 |          |       |         |      |
| 9 18          | 2 6.66                 | +34 52.0                    | 1.770    | 2.537 | 17.6    | 19.6 | 9 18          | 2 1.00                 | +9 33.9                    | 2.210    | 2.106 | 16.4    | 19.2 |
| 9 28          | 2 1.80                 | +36 7.1                     | 1.682    | 2.520 | 15.3    | 19.4 | 9 28          | 1 57.69                | +8 49.1                    | 1.142    | 2.091 | 11.9    | 18.9 |
| 10 8          | 1 54.20                | +36 58.8                    | 1.612    | 2.504 | 12.9    | 19.2 | 10 8          | 1 51.75                | +7 50.9                    | 1.094    | 2.077 | 6.8     | 18.6 |
| 10 18         | 1 44.57                | +37 21.8                    | 1.563    | 2.488 | 10.8    | 19.0 | 10 18         | 1 44.04                | +6 45.6                    | 1.069    | 2.064 | 2.0     | 18.3 |
| 10 28         | 1 34.17                | +37 13.6                    | 1.539    | 2.473 | 9.9     | 18.9 | 10 28         | 1 35.89                | +5 42.6                    | 1.069    | 2.052 | 5.4     | 18.4 |
| 11 7          | 1 24.50                | +36 37.2                    | 1.538    | 2.459 | 10.8    | 19.0 | 11 7          | 1 28.75                | +4 51.4                    | 1.092    | 2.042 | 10.8    | 18.7 |
| 11 17         | 1 16.90                | +35 39.6                    | 1.561    | 2.446 | 13.0    | 19.1 | 11 17         | 1 23.81                | +4 19.3                    | 1.137    | 2.033 | 15.8    | 19.0 |
| 11 27         | 1 12.35                | +34 31.5                    | 1.606    | 2.434 | 15.6    | 19.2 | 11 27         | 1 21.87                | +4 10.2                    | 1.201    | 2.026 | 20.0    | 19.2 |
| <b>248728</b> | 2006 QD <sub>48</sub>  | 10 20.7 69°08 2°9/18.2 18   |          |       |         |      | <b>412815</b> | 2014 PT <sub>37</sub>  | 10 20.7 140°14 0°1/20.6 18 |          |       |         |      |
| 9 18          | 2 6.06                 | +5 34.4                     | 1.709    | 2.587 | 13.4    | 20.6 | 9 18          | 2 3.79                 | +12 7.6                    | 2.511    | 3.362 | 10.5    | 22.0 |
| 9 28          | 2 0.27                 | +4 36.8                     | 1.672    | 2.612 | 9.5     | 20.4 | 9 28          | 1 58.37                | +11 40.7                   | 2.444    | 3.370 | 7.6     | 21.8 |
| 10 8          | 1 52.67                | +3 35.1                     | 1.658    | 2.637 | 5.5     | 20.2 | 10 8          | 1 51.57                | +11 6.0                    | 2.402    | 3.377 | 4.4     | 21.6 |
| 10 18         | 1 44.13                | +2 35.5                     | 1.672    | 2.663 | 2.9     | 20.1 | 10 18         | 1 43.95                | +10 26.3                   | 2.389    | 3.384 | 0.9     | 21.4 |
| 10 28         | 1 35.68                | +1 44.5                     | 1.714    | 2.688 | 5.2     | 20.3 | 10 28         | 1 36.23                | +9 45.4                    | 2.406    | 3.391 | 2.6     | 21.5 |
| 11 7          | 1 28.29                | +0 7.4                      | 1.782    | 2.713 | 8.9     | 20.6 | 11 7          | 1 29.14                | +9 7.5                     | 2.453    | 3.398 | 5.9     | 21.8 |
| 11 17         | 1 22.70                | +0 47.1                     | 1.876    | 2.738 | 12.3    | 20.9 | 11 17         | 1 23.28                | +8 36.2                    | 2.527    | 3.404 | 8.9     | 22.0 |
| 11 27         | 1 19.35                | +0 44.6                     | 1.991    | 2.762 | 15.1    | 21.1 | 11 27         | 1 19.12                | +8 14.6                    | 2.626    | 3.410 | 11.5    | 22.2 |
| <b>115073</b> | 2003 RO <sub>23</sub>  | 10 20.7 339°29 4°0/18.2 18  |          |       |         |      | <b>296747</b> | 2009 UB <sub>1</sub>   | 10 20.7 50°16 0°2/20.9 18  |          |       |         |      |
| 9 18          | 2 7.01                 | +2 2.0                      | 1.435    | 2.322 | 14.8    | 18.9 | 9 18          | 2 2.39                 | +13 41.6                   | 2.121    | 2.978 | 12.0    | 20.7 |
| 9 28          | 2 1.62                 | +1 38.5                     | 1.371    | 2.315 | 10.8    | 18.7 | 9 28          | 1 57.61                | +13 5.9                    | 2.055    | 2.983 | 8.7     | 20.5 |
| 10 8          | 1 53.80                | +1 13.8                     | 1.330    | 2.308 | 6.6     | 18.4 | 10 8          | 1 51.23                | +12 19.6                   | 2.012    | 2.988 | 5.1     | 20.3 |
| 10 18         | 1 44.42                | +0 53.6                     | 1.313    | 2.302 | 4.0     | 18.3 | 10 18         | 1 43.88                | +11 26.1                   | 1.997    | 2.992 | 1.2     | 20.1 |
| 10 28         | 1 34.75                | +0 44.1                     | 1.323    | 2.297 | 6.5     | 18.4 | 10 28         | 1 36.42                | +10 30.3                   | 2.011    | 2.997 | 2.8     | 20.2 |
| 11 7          | 1 26.10                | +0 49.7                     | 1.358    | 2.292 | 10.8    | 18.6 | 11 7          | 1 29.67                | +9 37.7                    | 2.054    | 3.002 | 6.6     | 20.5 |
| 11 17         | 1 19.52                | +1 12.7                     | 1.416    | 2.288 | 14.9    | 18.9 | 11 17         | 1 24.33                | +8 53.4                    | 2.123    | 3.008 | 10.0    | 20.7 |
| 11 27         | 1 15.72                | +1 53.4                     | 1.494    | 2.284 | 18.4    | 19.1 | 11 27         | 1 20.90                | +8 21.0                    | 2.216    | 3.013 | 12.9    | 20.9 |
| <b>38970</b>  | 2000 TC <sub>58</sub>  | 10 20.7 107°73 1°6/19.4 18  |          |       |         |      | <b>96179</b>  | 1988 DX <sub>4</sub>   | 10 20.7 233°90 2°0/18.5 18 |          |       |         |      |
| 9 18          | 2 7.90                 | +7 56.2                     | 1.716    | 2.587 | 13.7    | 19.4 | 9 18          | 2 4.03                 | +8 0.2                     | 2.220    | 3.086 | 11.2    | 20.9 |
| 9 28          | 2 1.80                 | +7 26.0                     | 1.660    | 2.597 | 9.8     | 19.2 | 9 28          | 1 58.81                | +6 51.2                    | 2.138    | 3.073 | 8.1     | 20.7 |
| 10 8          | 1 53.68                | +6 48.9                     | 1.627    | 2.606 | 5.6     | 19.0 | 10 8          | 1 51.96                | +5 33.9                    | 2.081    | 3.059 | 4.6     | 20.4 |
| 10 18         | 1 44.38                | +6 9.6                      | 1.622    | 2.616 | 1.8     | 18.8 | 10 18         | 1 44.05                | +4 13.4                    | 2.052    | 3.045 | 2.0     | 20.2 |
| 10 28         | 1 34.98                | +5 33.6                     | 1.644    | 2.625 | 4.3     | 19.0 | 10 28         | 1 35.91                | +2 56.0                    | 2.054    | 3.030 | 4.3     | 20.4 |
| 11 7          | 1 26.58                | +5 6.4                      | 1.694    | 2.635 | 8.5     | 19.2 | 11 7          | 1 28.38                | +1 48.2                    | 2.085    | 3.015 | 7.9     | 20.5 |
| 11 17         | 1 20.03                | +4 51.6                     | 1.770    | 2.644 | 12.3    | 19.5 | 11 17         | 1 22.18                | +0 54.6                    | 2.143    | 2.999 | 11.2    | 20.7 |
| 11 27         | 1 15.88                | +4 51.6                     | 1.867    | 2.652 | 15.4    | 19.7 | 11 27         | 1 17.88                | +0 18.5                    | 2.223    | 2.982 | 14.1    | 20.9 |
| <b>151671</b> | 2002 YC <sub>29</sub>  | 10 20.7 217°19 1°6/19.4 18  |          |       |         |      | <b>322951</b> | 2002 GT <sub>190</sub> | 10 20.7 74°24 6°2/16.6 17  |          |       |         |      |
| 9 18          | 2 7.49                 | +8 33.2                     | 1.783    | 2.651 | 13.4    | 20.6 | 9 18          | 2 8.93                 | -0 49.5                    | 1.283    | 2.174 | 16.0    | 20.4 |
| 9 28          | 2 1.62                 | +7 56.7                     | 1.710    | 2.646 | 9.7     | 20.4 | 9 28          | 2 2.84                 | -2 1.6                     | 1.248    | 2.191 | 11.7    | 20.2 |
| 10 8          | 1 53.66                | +7 11.9                     | 1.661    | 2.640 | 5.5     | 20.2 | 10 8          | 1 54.34                | -3 11.4                    | 1.234    | 2.208 | 7.8     | 20.0 |
| 10 18         | 1 44.40                | +6 23.4                     | 1.639    | 2.634 | 1.7     | 19.9 | 10 18         | 1 44.53                | -4 9.7                     | 1.245    | 2.225 | 6.3     | 20.0 |
| 10 28         | 1 34.86                | +5 37.1                     | 1.646    | 2.627 | 4.3     | 20.1 | 10 28         | 1 34.81                | -4 48.0                    | 1.282    | 2.242 | 8.7     | 20.2 |
| 11 7          | 1 26.17                | +4 59.1                     | 1.681    | 2.621 | 8.6     | 20.3 | 11 7          | 1 26.48                | -5 1.6                     | 1.343    | 2.259 | 12.5    | 20.5 |
| 11 17         | 1 19.22                | +4 34.1                     | 1.741    | 2.613 | 12.5    | 20.5 | 11 17         | 1 20.49                | -4 50.0                    | 1.425    | 2.275 | 16.1    | 20.7 |
| 11 27         | 1 14.67                | +4 24.9                     | 1.822    | 2.606 | 15.8    | 20.7 | 11 27         | 1 17.34                | -4 15.1                    | 1.527    | 2.292 | 19.2    | 21.0 |
| <b>443643</b> | 2014 OQ <sub>211</sub> | 10 20.7 267°00 5°6/14.5 18  |          |       |         |      | <b>411853</b> | 2012 DU <sub>75</sub>  | 10 20.7 146°22 4°9/25.9 18 |          |       |         |      |
| 9 18          | 2 2.05                 | -4 37.6                     | 2.205    | 3.083 | 10.8    | 20.6 | 9 18          | 2 9.60                 | +28 46.7                   | 2.885    | 3.648 | 11.6    | 21.4 |
| 9 28          | 1 57.30                | -5 51.8                     | 2.143    | 3.076 | 8.2     | 20.5 | 9 28          | 2 2.67                 | +29 25.0                   | 2.805    | 3.656 | 9.5     | 21.3 |
| 10 8          | 1 51.03                | -7 3.3                      | 2.108    | 3.069 | 6.1     | 20.3 | 10 8          | 1 54.11                | +29 48.8                   | 2.749    | 3.664 | 7.3     | 21.1 |
| 10 18         | 1 43.82                | -8 5.7                      | 2.099    | 3.062 | 5.8     | 20.3 | 10 18         | 1 44.52                | +29 56.7                   | 2.721    | 3.671 | 5.5     | 21.0 |
| 10 28         | 1 36.46                | -8 53.1                     | 2.118    | 3.055 | 7.5     | 20.4 | 10 28         | 1 34.68                | +29 49.2                   | 2.722    | 3.677 | 4.9     | 21.0 |
| 11 7          | 1 29.74                | -9 21.5                     | 2.164    | 3.048 | 10.0    | 20.5 | 11 7          | 1 25.43                | +29 29.0                   | 2.753    | 3.684 | 6.1     | 21.1 |
| 11 17         | 1 24.33                | -9 29.2                     | 2.234    | 3.041 | 12.6    | 20.7 | 11 17         | 1 17.47                | +29 0.2                    | 2.812    | 3.690 | 8.1     | 21.2 |
| 11 27         | 1 20.74                | -9 16.5                     | 2.324    | 3.034 | 14.8    | 20.9 | 11 27         | 1 11.38                | +28 28.0                   | 2.897    | 3.696 | 10.2    | 21.4 |
| <b>329140</b> | 2011 DP <sub>45</sub>  | 10 20.7 337°95 2°2/18.4 18  |          |       |         |      | <b>380155</b> | 2000 AO <sub>146</sub> | 10 20.7 272°27 12°9/1.7 18 |          |       |         |      |
| 9 18          | 2 1.38                 | +5 58.5                     | 2.210    | 3.084 | 10.9    | 20.6 | 9 18          | 2 11.38                | +45 31.8                   | 1.808    | 2.494 | 19.9    | 20.3 |
| 9 28          | 1 56.82                | +5 10.5                     | 2.142    | 3.081 | 7.8     | 20.4 | 9 28          | 2 5.68                 | +46 23.9                   | 1.707    | 2.472 | 18.1    | 20.1 |
| 10 8          | 1 50.75                | +4 17.6                     | 2.100    | 3.079 | 4.5     | 20.1 | 10 8          | 1 56.66</              |                            |          |       |         |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$          | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$            | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------|--------------|---------|------|---------------|-------------------------------|-----------------|----------|----------------|---------|------|
| <b>392670</b> | 2011 <i>UV</i> <sub>305</sub> | 10 20.7 40°07'  |          | 7.7/15.4 18  |         |      | <b>225423</b> | 2000 <i>AO</i> <sub>206</sub> | 10 20.7 300°88' |          | 0.1/20.6 17    |         |      |
| 9 18          | 2 7.99                        | - 8 28.0        | 1.594    | 2.473        | 14.1    | 20.3 | 9 18          | 2 2.95                        | +12 16.8        | 2.062    | 2.923          | 12.1    | 21.2 |
| 9 28          | 2 1.90                        | - 9 13.8        | 1.553    | 2.482        | 11.0    | 20.1 | 9 28          | 1 58.26                       | +11 50.8        | 1.974    | 2.905          | 8.9     | 21.0 |
| 10 8          | 1 53.75                       | - 9 49.7        | 1.534    | 2.491        | 8.4     | 20.0 | 10 8          | 1 51.77                       | +11 14.5        | 1.910    | 2.887          | 5.2     | 20.7 |
| 10 18         | 1 44.44                       | -10 8.9         | 1.540    | 2.500        | 7.8     | 20.0 | 10 18         | 1 44.09                       | +10 31.1        | 1.873    | 2.868          | 1.1     | 20.4 |
| 10 28         | 1 35.13                       | -10 5.9         | 1.573    | 2.510        | 9.5     | 20.1 | 10 28         | 1 36.08                       | + 9 45.1        | 1.865    | 2.851          | 3.1     | 20.5 |
| 11 7          | 1 26.95                       | - 9 39.1        | 1.630    | 2.520        | 12.3    | 20.3 | 11 7          | 1 28.66                       | + 9 1.9         | 1.885    | 2.833          | 7.2     | 20.8 |
| 11 17         | 1 20.73                       | - 8 49.8        | 1.710    | 2.530        | 15.2    | 20.5 | 11 17         | 1 22.66                       | + 8 26.6        | 1.931    | 2.815          | 10.9    | 21.0 |
| 11 27         | 1 16.99                       | - 7 41.0        | 1.808    | 2.541        | 17.7    | 20.7 | 11 27         | 1 18.69                       | + 8 3.2         | 2.000    | 2.798          | 14.1    | 21.1 |
| <b>378185</b> | 2006 <i>XF</i> <sub>11</sub>  | 10 20.7 292°42' |          | 3.4/23.2 18  |         |      | <b>22242</b>  | 4080 <i>T</i> <sub>-3</sub>   | 10 20.7 127°97' |          | 1°1/19.7 18    |         |      |
| 9 18          | 2 6.09                        | +21 3.2         | 1.447    | 2.295        | 17.0    | 21.1 | 9 18          | 2 5.84                        | + 7 46.0        | 2.348    | 3.208          | 10.9    | 19.0 |
| 9 28          | 2 1.20                        | +20 48.1        | 1.372    | 2.288        | 13.2    | 20.9 | 9 28          | 1 59.95                       | + 7 32.4        | 2.282    | 3.214          | 7.8     | 18.8 |
| 10 8          | 1 53.71                       | +20 10.5        | 1.317    | 2.281        | 8.7     | 20.6 | 10 8          | 1 52.54                       | + 7 14.2        | 2.242    | 3.220          | 4.4     | 18.6 |
| 10 18         | 1 44.49                       | +19 11.7        | 1.286    | 2.274        | 4.4     | 20.3 | 10 18         | 1 44.22                       | + 6 54.2        | 2.231    | 3.226          | 1.3     | 18.4 |
| 10 28         | 1 34.87                       | +17 57.3        | 1.281    | 2.267        | 4.2     | 20.3 | 10 28         | 1 35.79                       | + 6 35.7        | 2.250    | 3.231          | 3.2     | 18.5 |
| 11 7          | 1 26.26                       | +16 36.5        | 1.302    | 2.260        | 8.6     | 20.5 | 11 7          | 1 28.04                       | + 6 22.3        | 2.297    | 3.237          | 6.6     | 18.8 |
| 11 17         | 1 19.83                       | +15 19.5        | 1.348    | 2.253        | 13.2    | 20.8 | 11 17         | 1 21.62                       | + 6 16.8        | 2.372    | 3.242          | 9.7     | 19.0 |
| 11 27         | 1 16.34                       | +14 15.1        | 1.415    | 2.246        | 17.2    | 21.0 | 11 27         | 1 17.05                       | + 6 21.0        | 2.471    | 3.247          | 12.4    | 19.2 |
| <b>357448</b> | 2004 <i>CS</i> <sub>59</sub>  | 10 20.7 336°45' |          | 10°0/13.8 17 |         |      | <b>485932</b> | 2012 <i>HE</i> <sub>6</sub>   | 10 20.7 180°84' |          | 3.8/16.0 18    |         |      |
| 9 18          | 2 0.82                        | - 7 24.7        | 1.128    | 2.035        | 16.4    | 19.3 | 9 18          | 2 1.43                        | - 0 48.1        | 2.680    | 3.553          | 9.3     | 22.0 |
| 9 28          | 1 57.82                       | - 8 40.8        | 1.060    | 2.005        | 13.1    | 19.0 | 9 28          | 1 56.62                       | - 1 49.7        | 2.619    | 3.553          | 6.8     | 21.9 |
| 10 8          | 1 51.99                       | - 9 50.4        | 1.012    | 1.976        | 10.5    | 18.8 | 10 8          | 1 50.58                       | - 2 51.1        | 2.584    | 3.553          | 4.6     | 21.7 |
| 10 18         | 1 44.16                       | -10 40.9        | 0.985    | 1.949        | 10.3    | 18.7 | 10 18         | 1 43.80                       | - 3 47.6        | 2.578    | 3.553          | 3.8     | 21.7 |
| 10 28         | 1 35.73                       | -11 0.9         | 0.980    | 1.924        | 12.9    | 18.7 | 10 28         | 1 36.93                       | - 4 34.6        | 2.601    | 3.553          | 5.4     | 21.8 |
| 11 7          | 1 28.27                       | -10 43.7        | 0.995    | 1.901        | 16.8    | 18.9 | 11 7          | 1 30.60                       | - 5 8.5         | 2.653    | 3.553          | 7.7     | 21.9 |
| 11 17         | 1 23.10                       | - 9 48.8        | 1.028    | 1.880        | 20.8    | 19.1 | 11 17         | 1 25.35                       | - 5 27.4        | 2.730    | 3.552          | 10.1    | 22.1 |
| 11 27         | 1 21.13                       | - 8 20.0        | 1.077    | 1.861        | 24.4    | 19.2 | 11 27         | 1 21.61                       | - 5 30.5        | 2.830    | 3.551          | 12.2    | 22.2 |
| <b>214603</b> | 2006 <i>QD</i> <sub>182</sub> | 10 20.7 333°67' |          | 3°7/17.7 18  |         |      | <b>475831</b> | 2007 <i>BB</i> <sub>12</sub>  | 10 20.7 97°94'  |          | 8°2/27.1 18    |         |      |
| 9 18          | 2 4.69                        | + 2 31.6        | 1.709    | 2.592        | 13.1    | 20.1 | 9 18          | 2 13.39                       | +31 40.9        | 1.677    | 2.456          | 18.0    | 21.2 |
| 9 28          | 1 59.62                       | + 1 48.6        | 1.645    | 2.587        | 9.5     | 19.9 | 9 28          | 2 6.37                        | +32 33.1        | 1.614    | 2.470          | 15.0    | 21.0 |
| 10 8          | 1 52.54                       | + 1 3.2         | 1.605    | 2.583        | 5.8     | 19.6 | 10 8          | 1 56.62                       | +32 59.7        | 1.572    | 2.484          | 11.9    | 20.9 |
| 10 18         | 1 44.22                       | + 0 21.2        | 1.591    | 2.578        | 3.7     | 19.5 | 10 18         | 1 45.13                       | +32 57.1        | 1.552    | 2.497          | 9.2     | 20.8 |
| 10 28         | 1 35.68                       | - 0 11.2        | 1.604    | 2.574        | 6.0     | 19.7 | 10 28         | 1 33.35                       | +32 26.1        | 1.558    | 2.511          | 8.2     | 20.7 |
| 11 7          | 1 28.00                       | - 0 29.0        | 1.644    | 2.571        | 9.8     | 19.9 | 11 7          | 1 22.76                       | +31 32.6        | 1.590    | 2.524          | 9.5     | 20.8 |
| 11 17         | 1 22.04                       | - 0 29.3        | 1.707    | 2.567        | 13.4    | 20.1 | 11 17         | 1 14.57                       | +30 26.0        | 1.648    | 2.537          | 12.1    | 21.0 |
| 11 27         | 1 18.40                       | - 0 11.4        | 1.791    | 2.564        | 16.5    | 20.3 | 11 27         | 1 9.48                        | +29 16.8        | 1.728    | 2.550          | 14.9    | 21.3 |
| <b>224147</b> | 2005 <i>QL</i> <sub>51</sub>  | 10 20.7 117°41' |          | 2°0/22.2 16  |         |      | <b>224779</b> | 2006 <i>GM</i> <sub>41</sub>  | 10 20.7 249°71' |          | 0°9/19.6 17    |         |      |
| 9 18          | 2 10.70                       | +17 19.8        | 1.714    | 2.557        | 15.0    | 21.1 | 9 18          | 2 1.15                        | +11 13.6        | 2.597    | 3.454          | 10.0    | 20.8 |
| 9 28          | 2 3.92                        | +17 13.6        | 1.655    | 2.572        | 11.2    | 20.9 | 9 28          | 1 56.57                       | +10 10.8        | 2.511    | 3.441          | 7.3     | 20.6 |
| 10 8          | 1 54.96                       | +16 52.3        | 1.619    | 2.587        | 7.0     | 20.7 | 10 8          | 1 50.62                       | + 8 58.9        | 2.451    | 3.428          | 4.1     | 20.4 |
| 10 18         | 1 44.72                       | +16 17.9        | 1.610    | 2.601        | 2.8     | 20.5 | 10 18         | 1 43.83                       | + 7 41.8        | 2.419    | 3.414          | 1.0     | 20.1 |
| 10 28         | 1 34.38                       | +15 34.9        | 1.629    | 2.615        | 3.4     | 20.6 | 10 28         | 1 36.84                       | + 6 24.6        | 2.419    | 3.401          | 3.1     | 20.3 |
| 11 7          | 1 25.13                       | +14 49.9        | 1.676    | 2.628        | 7.5     | 20.9 | 11 7          | 1 30.37                       | + 5 12.8        | 2.448    | 3.386          | 6.4     | 20.5 |
| 11 17         | 1 17.89                       | +14 9.0         | 1.750    | 2.641        | 11.4    | 21.1 | 11 17         | 1 25.00                       | + 4 11.2        | 2.506    | 3.372          | 9.4     | 20.7 |
| 11 27         | 1 13.24                       | +13 37.9        | 1.846    | 2.653        | 14.7    | 21.4 | 11 27         | 1 21.21                       | + 3 23.3        | 2.587    | 3.357          | 12.0    | 20.8 |
| <b>278217</b> | 2007 <i>EK</i> <sub>54</sub>  | 10 20.7 245°29' |          | 1°5/19.5 18  |         |      | <b>55190</b>  | 2001 <i>QC</i> <sub>297</sub> | 10 20.7 172°33' |          | 1°3/19.8 18    |         |      |
| 9 18          | 2 7.17                        | + 9 5.5         | 1.705    | 2.575        | 13.8    | 21.8 | 9 18          | 2 8.98                        | + 8 30.3        | 1.670    | 2.538          | 14.1    | 18.8 |
| 9 28          | 2 1.55                        | + 8 27.5        | 1.629    | 2.565        | 10.0    | 21.6 | 9 28          | 2 2.79                        | + 8 11.6        | 1.604    | 2.540          | 10.2    | 18.6 |
| 10 8          | 1 53.74                       | + 7 40.1        | 1.576    | 2.555        | 5.7     | 21.3 | 10 8          | 1 54.41                       | + 7 45.6        | 1.562    | 2.540          | 5.8     | 18.4 |
| 10 18         | 1 44.49                       | + 6 47.9        | 1.549    | 2.544        | 1.6     | 21.0 | 10 18         | 1 44.66                       | + 7 15.9        | 1.546    | 2.541          | 1.5     | 18.1 |
| 10 28         | 1 34.91                       | + 5 57.2        | 1.551    | 2.533        | 4.4     | 21.2 | 10 28         | 1 34.68                       | + 6 48.0        | 1.559    | 2.542          | 4.2     | 18.3 |
| 11 7          | 1 26.16                       | + 5 14.7        | 1.580    | 2.521        | 8.9     | 21.4 | 11 7          | 1 25.66                       | + 6 27.1        | 1.598    | 2.542          | 8.6     | 18.5 |
| 11 17         | 1 19.21                       | + 4 45.5        | 1.634    | 2.509        | 13.0    | 21.6 | 11 17         | 1 18.55                       | + 6 17.3        | 1.664    | 2.542          | 12.7    | 18.8 |
| 11 27         | 1 14.74                       | + 4 33.2        | 1.709    | 2.497        | 16.5    | 21.8 | 11 27         | 1 13.98                       | + 6 21.3        | 1.750    | 2.542          | 16.1    | 19.0 |
| <b>353828</b> | 2012 <i>UE</i> <sub>61</sub>  | 10 20.7 295°00' |          | 2°8/22.9 18  |         |      | <b>390679</b> | 2002 <i>TW</i> <sub>277</sub> | 10 20.7 350°84' |          | 13°6/23.5 14 C |         |      |
| 9 18          | 2 4.68                        | +19 55.1        | 1.731    | 2.574        | 14.9    | 21.0 | 9 18          | 2 27.13                       | +25 47.0        | 0.918    | 1.754          | 25.4    | 20.1 |
| 9 28          | 1 59.90                       | +19 42.5        | 1.643    | 2.558        | 11.5    | 20.7 | 9 28          | 2 19.10                       | +29 9.3         | 0.858    | 1.751          | 21.3    | 19.8 |
| 10 8          | 1 52.88                       | +19 11.6        | 1.577    | 2.542        | 7.5     | 20.5 | 10 8          | 2 5.51                        | +32 14.4        | 0.815    | 1.749          | 17.2    | 19.6 |
| 10 18         | 1 44.33                       | +18 23.6        | 1.537    | 2.525        | 3.7     | 20.2 | 10 18         | 1 47.32                       | +34 43.0        | 0.793    | 1.747          | 14.1    | 19.4 |
| 10 28         | 1 35.34                       | +17 22.8        | 1.524    | 2.509        | 3.7     | 20.2 | 10 28         | 1 27.14                       | +36 19.5        | 0.794    | 1.745          | 14.0    | 19.4 |
| 11 7          | 1 27.11                       | +16 16.2        | 1.538    | 2.493        | 7.7     | 20.4 | 11 7          | 1 8.52                        | +37 2.5         | 0.817    | 1.745          | 16.7    | 19.6 |
| 11 17         | 1 20.66                       | +15 11.9        | 1.577    | 2.477        | 11.9    | 20.6 | 11 17         | 0 54.46                       | +37 4.4         | 0.858    | 1.745          | 20.6    | 19.8 |
| 11 27         | 1 16.73                       | +14 17.3        | 1.639    | 2.462        | 15.6    | 20.8 | 11 27         | 0 46.58                       | +36 45.3        | 0.916    | 1.746          | 24.4    | 20.1 |
| <b>157819</b> | 1996 <i>JV</i> <sub>6</sub>   | 10 20.7 204°51' |          | 1°5/19.1 18  |         |      | <b>304493</b> | 2006 <i>UO</i> <sub>124</sub> | 10 20.7 291°30' |          | 1°2/21.7 18    |         |      |
| 9 18          | 2 3.00                        | + 7 31.9        | 2.401    | 3.265        | 10.5    | 21.1 | 9 18          | 2 5.20                        | +15 30.9        | 1.884    | 2.737          | 13.5    | 21.5 |
| 9 28          | 1 57.92                       | + 6 56.0        | 2.329    | 3.264        | 7.5     | 20.9 | 9 28          | 1 59.98                       | +15 16.9        | 1.808    | 2.732          | 10.0    | 21.3 |
| 10 8          | 1 51.38                       | + 6 14.9        | 2.284    | 3.262        | 4.3     | 20.7 | 10 8          | 1 52.78                       | +14 50.1        | 1.755    | 2.727          | 6.1     | 21.1 |
| 10 18         | 1 43.97                       | + 5 32.1        | 2.266    | 3.260        | 1.5     | 20.5 | 10 18         | 1 44.32                       | +14 12.8        | 1.728    | 2.722          | 2.0     | 20.8 |
| 10 28         | 1 36.41                       | + 4 51.9        | 2.278    | 3.258        | 3.5     | 20.7 | 10 28         | 1 35.59                       | +13 29.2        | 1.730    | 2.717          | 3.0     | 20.9 |
| 11 7          | 1 29.45                       | + 4 18.7        | 2.320    | 3.255        | 6.8     | 20.9 | 11 7          | 1 27.62                       | +12 45.2        | 1.760    | 2.712          | 7.2     | 21.1 |
| 11 17         | 1 23.73                       | + 3 55.5        | 2.388    | 3.253        | 9.9     | 21.1 | 11 17         | 1 21.30                       | +12 6.6         | 1.815    | 2.707          | 11.0    | 21.3 |
| 11 27         | 1 19.73                       | + 3 44.8        | 2.479    | 3.250        | 12.5    | 21.3 | 11 27         | 1 17.24                       | +11 38.2        | 1.894    | 2.703          | 14.4    | 21.6 |
| <b>163782</b> | 2003 <i>QZ</i> <sub>26</sub>  | 10 20.7 33°64'  |          | 9°2/26.3 18  |         |      | <b>473523</b> | 2015 <i>XZ</i> <sub>147</sub> | 10 20.7 273°01' |          | 0°6/20.1 17    |         |      |
| 9 1           |                               |                 |          |              |         |      |               |                               |                 |          |                |         |      |



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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------------|----------|---------|------|---------------|-------------------------------|-----------------|----------------|----------|---------|------|
| <b>95379</b>  | 2002 <i>CC</i> <sub>167</sub> |                 | 10 20.7 103°40 | 2°4/22.9 | 18      |      | <b>193363</b> | 2000 <i>UL</i> <sub>62</sub>  |                 | 10 20.7 34°84  | 2°9/22.4 | 18      |      |
| 9 18          | 2 6.85                        | +19 10.5        | 2.282          | 3.109    | 12.3    | 19.9 | 9 18          | 2 9.16                        | +16 50.6        | 1.149          | 2.020    | 18.9    | 19.1 |
| 9 28          | 2 0.80                        | +19 16.3        | 2.216          | 3.122    | 9.3     | 19.7 | 9 28          | 2 3.47                        | +17 13.4        | 1.109          | 2.040    | 14.2    | 18.9 |
| 10 8          | 1 53.08                       | +19 9.6         | 2.174          | 3.134    | 6.1     | 19.5 | 10 8          | 1 54.95                       | +17 17.6        | 1.089          | 2.061    | 8.9     | 18.7 |
| 10 18         | 1 44.37                       | +18 51.2        | 2.159          | 3.146    | 3.1     | 19.4 | 10 18         | 1 44.80                       | +17 4.6         | 1.092          | 2.083    | 3.9     | 18.4 |
| 10 28         | 1 35.53                       | +18 24.1        | 2.174          | 3.158    | 3.1     | 19.4 | 10 28         | 1 34.65                       | +16 39.5        | 1.119          | 2.106    | 4.3     | 18.5 |
| 11 7          | 1 27.44                       | +17 52.3        | 2.218          | 3.170    | 6.0     | 19.6 | 11 7          | 1 26.06                       | +16 10.1        | 1.171          | 2.130    | 9.1     | 18.9 |
| 11 17         | 1 20.82                       | +17 20.6        | 2.290          | 3.181    | 9.1     | 19.8 | 11 17         | 1 20.13                       | +15 44.2        | 1.247          | 2.155    | 13.7    | 19.2 |
| 11 27         | 1 16.19                       | +16 53.7        | 2.387          | 3.192    | 11.8    | 20.0 | 11 27         | 1 17.43                       | +15 28.0        | 1.342          | 2.180    | 17.5    | 19.5 |
| <b>260391</b> | 2004 <i>VG</i> <sub>73</sub>  |                 | 10 20.7 322°97 | 9°3/12.8 | 18      |      | <b>76718</b>  | 2000 <i>JW</i> <sub>16</sub>  |                 | 10 20.7 295°04 | 5°0/17.3 | 18      |      |
| 9 18          | 2 6.27                        | -15 14.0        | 1.902          | 2.765    | 12.9    | 19.6 | 9 18          | 2 8.83                        | - 1 52.6        | 1.772          | 2.647    | 13.1    | 18.3 |
| 9 28          | 2 0.64                        | -16 6.6         | 1.845          | 2.752    | 10.8    | 19.4 | 9 28          | 2 2.80                        | - 2 18.3        | 1.689          | 2.625    | 9.8     | 18.1 |
| 10 8          | 1 53.10                       | -16 45.9        | 1.810          | 2.739    | 9.5     | 19.3 | 10 8          | 1 54.54                       | - 2 41.9        | 1.630          | 2.602    | 6.5     | 17.8 |
| 10 18         | 1 44.39                       | -17 4.9         | 1.801          | 2.727    | 9.5     | 19.3 | 10 18         | 1 44.76                       | - 2 57.9        | 1.598          | 2.579    | 5.0     | 17.7 |
| 10 28         | 1 35.50                       | -16 58.3        | 1.817          | 2.715    | 10.9    | 19.3 | 10 28         | 1 34.54                       | - 3 0.6         | 1.594          | 2.556    | 7.0     | 17.8 |
| 11 7          | 1 27.44                       | -16 24.4        | 1.856          | 2.704    | 13.2    | 19.5 | 11 7          | 1 25.04                       | - 2 46.4        | 1.616          | 2.533    | 10.6    | 17.9 |
| 11 17         | 1 21.05                       | -15 24.7        | 1.918          | 2.693    | 15.5    | 19.6 | 11 17         | 1 17.27                       | - 2 13.8        | 1.663          | 2.511    | 14.3    | 18.1 |
| 11 27         | 1 16.89                       | -14 2.7         | 1.997          | 2.683    | 17.6    | 19.8 | 11 27         | 1 11.97                       | - 1 23.1        | 1.730          | 2.488    | 17.5    | 18.3 |
| <b>403434</b> | 2009 <i>SG</i> <sub>185</sub> |                 | 10 20.7 250°38 | 2°9/23.3 | 17      |      | <b>510533</b> | 2012 <i>FE</i> <sub>83</sub>  |                 | 10 20.7 163°44 | 3°6/18.0 | 17      |      |
| 9 18          | 2 6.32                        | +20 4.8         | 2.339          | 3.162    | 12.2    | 21.2 | 9 18          | 2 10.95                       | + 2 33.4        | 1.826          | 2.695    | 13.1    | 22.1 |
| 9 28          | 2 0.54                        | +20 20.2        | 2.257          | 3.159    | 9.4     | 21.0 | 9 28          | 2 3.97                        | + 1 51.4        | 1.766          | 2.701    | 9.5     | 21.9 |
| 10 8          | 1 53.02                       | +20 23.1        | 2.198          | 3.155    | 6.3     | 20.8 | 10 8          | 1 54.99                       | + 1 7.4         | 1.732          | 2.707    | 5.7     | 21.7 |
| 10 18         | 1 44.39                       | +20 13.7        | 2.167          | 3.151    | 3.5     | 20.6 | 10 18         | 1 44.82                       | + 0 26.9        | 1.725          | 2.712    | 3.5     | 21.6 |
| 10 28         | 1 35.48                       | +19 54.2        | 2.166          | 3.147    | 3.4     | 20.6 | 10 28         | 1 34.54                       | - 0 4.5         | 1.747          | 2.716    | 5.7     | 21.7 |
| 11 7          | 1 27.19                       | +19 28.2        | 2.193          | 3.143    | 6.1     | 20.8 | 11 7          | 1 25.22                       | - 0 22.2        | 1.797          | 2.720    | 9.4     | 22.0 |
| 11 17         | 1 20.29                       | +19 0.4         | 2.248          | 3.139    | 9.2     | 21.0 | 11 17         | 1 17.73                       | - 0 23.7        | 1.872          | 2.722    | 12.8    | 22.2 |
| 11 27         | 1 15.37                       | +18 35.5        | 2.327          | 3.135    | 12.0    | 21.1 | 11 27         | 1 12.62                       | - 0 8.5         | 1.969          | 2.724    | 15.8    | 22.4 |
| <b>143783</b> | 2003 <i>WC</i> <sub>74</sub>  |                 | 10 20.7 352°93 | 1°2/21.3 | 18      |      | <b>371396</b> | 2006 <i>RR</i> <sub>37</sub>  |                 | 10 20.7 356°58 | 7°1/16.1 | 18      |      |
| 9 18          | 2 2.82                        | +13 9.3         | 0.923          | 1.824    | 19.8    | 18.9 | 9 18          | 2 0.16                        | + 0 47.3        | 0.941          | 1.859    | 17.8    | 19.9 |
| 9 28          | 1 59.69                       | +13 22.9        | 0.866          | 1.815    | 14.8    | 18.6 | 9 28          | 1 57.42                       | - 0 37.6        | 0.895          | 1.852    | 13.1    | 19.7 |
| 10 8          | 1 53.23                       | +13 20.1        | 0.826          | 1.807    | 8.9     | 18.3 | 10 8          | 1 51.73                       | - 2 5.1         | 0.867          | 1.848    | 8.7     | 19.4 |
| 10 18         | 1 44.49                       | +13 3.3         | 0.807          | 1.802    | 2.6     | 17.9 | 10 18         | 1 44.16                       | - 3 22.5        | 0.861          | 1.845    | 7.2     | 19.3 |
| 10 28         | 1 35.22                       | +12 38.6        | 0.809          | 1.798    | 4.7     | 18.0 | 10 28         | 1 36.32                       | - 4 16.7        | 0.876          | 1.843    | 10.2    | 19.5 |
| 11 7          | 1 27.30                       | +12 14.9        | 0.833          | 1.796    | 11.0    | 18.4 | 11 7          | 1 29.82                       | - 4 39.3        | 0.912          | 1.844    | 14.9    | 19.8 |
| 11 17         | 1 22.24                       | +12 0.4         | 0.877          | 1.796    | 16.7    | 18.7 | 11 17         | 1 25.87                       | - 4 28.0        | 0.967          | 1.846    | 19.5    | 20.0 |
| 11 27         | 1 20.90                       | +12 1.4         | 0.938          | 1.798    | 21.5    | 19.0 | 11 27         | 1 25.18                       | - 3 45.0        | 1.037          | 1.850    | 23.3    | 20.3 |
| <b>84100</b>  | Farnocchia                    |                 | 10 20.7 16°06  | 3°8/17.8 | 18      |      | <b>83756</b>  | 2001 <i>TJ</i> <sub>140</sub> |                 | 10 20.7 278°37 | 1°4/19.6 | 18      |      |
| 9 18          | 2 1.64                        | + 5 14.7        | 1.298          | 2.196    | 15.4    | 18.4 | 9 18          | 2 6.96                        | + 7 25.3        | 1.948          | 2.815    | 12.5    | 19.5 |
| 9 28          | 1 57.76                       | + 4 8.9         | 1.252          | 2.202    | 11.0    | 18.2 | 9 28          | 2 1.20                        | + 7 12.2        | 1.869          | 2.804    | 9.0     | 19.3 |
| 10 8          | 1 51.59                       | + 2 57.0        | 1.227          | 2.209    | 6.5     | 18.0 | 10 8          | 1 53.50                       | + 6 53.6        | 1.814          | 2.793    | 5.2     | 19.1 |
| 10 18         | 1 44.08                       | + 1 47.3        | 1.227          | 2.217    | 3.8     | 17.8 | 10 18         | 1 44.53                       | + 6 32.9        | 1.787          | 2.782    | 1.6     | 18.8 |
| 10 28         | 1 36.46                       | + 0 49.0        | 1.251          | 2.226    | 6.6     | 18.0 | 10 28         | 1 35.25                       | + 6 14.1        | 1.788          | 2.770    | 3.9     | 18.9 |
| 11 7          | 1 29.96                       | + 0 9.3         | 1.300          | 2.237    | 10.9    | 18.3 | 11 7          | 1 26.67                       | + 6 1.6         | 1.818          | 2.759    | 7.9     | 19.2 |
| 11 17         | 1 25.52                       | - 0 7.9         | 1.372          | 2.248    | 15.0    | 18.6 | 11 17         | 1 19.66                       | + 5 59.0        | 1.874          | 2.748    | 11.7    | 19.4 |
| 11 27         | 1 23.69                       | - 0 1.9         | 1.462          | 2.260    | 18.4    | 18.8 | 11 27         | 1 14.87                       | + 6 8.5         | 1.952          | 2.737    | 14.9    | 19.6 |
| <b>32367</b>  | 2000 <i>QL</i> <sub>144</sub> |                 | 10 20.7 135°31 | 2°4/18.3 | 18      |      | <b>154776</b> | 2004 <i>PF</i> <sub>32</sub>  |                 | 10 20.7 357°49 | 2°2/18.9 | 18      |      |
| 9 18          | 2 4.22                        | + 5 12.9        | 2.191          | 3.061    | 11.1    | 19.1 | 9 18          | 2 3.07                        | + 6 38.0        | 1.670          | 2.551    | 13.4    | 19.4 |
| 9 28          | 1 58.85                       | + 4 27.3        | 2.130          | 3.067    | 8.0     | 18.9 | 9 28          | 1 58.51                       | + 6 4.9         | 1.606          | 2.549    | 9.7     | 19.2 |
| 10 8          | 1 51.95                       | + 3 37.8        | 2.095          | 3.073    | 4.6     | 18.7 | 10 8          | 1 51.97                       | + 5 25.8        | 1.567          | 2.547    | 5.5     | 19.0 |
| 10 18         | 1 44.14                       | + 2 49.0        | 2.088          | 3.079    | 2.4     | 18.6 | 10 18         | 1 44.19                       | + 4 45.6        | 1.552          | 2.546    | 2.2     | 18.7 |
| 10 28         | 1 36.24                       | + 2 5.9         | 2.110          | 3.084    | 4.4     | 18.8 | 10 28         | 1 36.21                       | + 4 10.3        | 1.565          | 2.545    | 4.7     | 18.9 |
| 11 7          | 1 29.05                       | + 1 32.9        | 2.161          | 3.089    | 7.7     | 19.0 | 11 7          | 1 29.08                       | + 3 45.2        | 1.605          | 2.545    | 8.9     | 19.2 |
| 11 17         | 1 23.24                       | + 1 13.1        | 2.237          | 3.094    | 10.8    | 19.2 | 11 17         | 1 23.66                       | + 3 34.3        | 1.668          | 2.546    | 12.7    | 19.4 |
| 11 27         | 1 19.30                       | + 1 8.0         | 2.337          | 3.099    | 13.4    | 19.4 | 11 27         | 1 20.56                       | + 3 39.6        | 1.753          | 2.548    | 15.9    | 19.6 |
| <b>234725</b> | 2002 <i>KL</i> <sub>8</sub>   |                 | 10 20.7 120°60 | 8°3/10.8 | 16      |      | <b>442449</b> | 2011 <i>UR</i> <sub>208</sub> |                 | 10 20.7 47°32  | 2°0/22.3 | 18      |      |
| 9 18          | 2 5.73                        | -13 9.2         | 2.199          | 3.060    | 11.4    | 20.4 | 9 18          | 2 5.99                        | +17 54.9        | 1.509          | 2.365    | 16.0    | 21.0 |
| 9 28          | 1 59.83                       | -15 11.6        | 2.174          | 3.081    | 9.5     | 20.4 | 9 28          | 2 0.68                        | +17 37.1        | 1.461          | 2.385    | 12.0    | 20.8 |
| 10 8          | 1 52.43                       | -17 2.2         | 2.177          | 3.100    | 8.4     | 20.3 | 10 8          | 1 53.18                       | +17 2.1         | 1.435          | 2.405    | 7.4     | 20.6 |
| 10 18         | 1 44.23                       | -18 33.3        | 2.206          | 3.119    | 8.7     | 20.4 | 10 18         | 1 44.43                       | +16 13.0        | 1.433          | 2.425    | 3.0     | 20.4 |
| 10 28         | 1 36.06                       | -19 39.0        | 2.263          | 3.138    | 10.1    | 20.5 | 10 28         | 1 35.67                       | +15 15.8        | 1.459          | 2.446    | 3.5     | 20.5 |
| 11 7          | 1 28.73                       | -20 16.8        | 2.344          | 3.155    | 12.0    | 20.7 | 11 7          | 1 28.07                       | +14 18.4        | 1.511          | 2.467    | 7.8     | 20.8 |
| 11 17         | 1 22.86                       | -20 27.3        | 2.447          | 3.172    | 13.9    | 20.8 | 11 17         | 1 22.52                       | +13 27.9        | 1.588          | 2.488    | 11.8    | 21.1 |
| 11 27         | 1 18.90                       | -20 13.4        | 2.568          | 3.188    | 15.4    | 21.0 | 11 27         | 1 19.56                       | +12 49.8        | 1.687          | 2.510    | 15.2    | 21.4 |
| <b>356813</b> | 2011 <i>US</i> <sub>369</sub> |                 | 10 20.7 343°91 | 1°5/19.6 | 18      |      | <b>490452</b> | 2009 <i>SR</i> <sub>209</sub> |                 | 10 20.7 297°09 | 2°0/18.3 | 18      |      |
| 9 18          | 2 5.16                        | + 8 20.4        | 1.643          | 2.520    | 13.9    | 20.2 | 9 18          | 2 0.76                        | +10 17.1        | 2.115          | 2.983    | 11.5    | 20.8 |
| 9 28          | 2 0.09                        | + 7 55.8        | 1.576          | 2.516    | 10.0    | 19.9 | 9 28          | 1 56.62                       | + 8 32.9        | 2.024          | 2.962    | 8.3     | 20.6 |
| 10 8          | 1 52.91                       | + 7 23.5        | 1.532          | 2.512    | 5.7     | 19.7 | 10 8          | 1 50.83                       | + 6 35.4        | 1.960          | 2.940    | 4.7     | 20.3 |
| 10 18         | 1 44.38                       | + 6 48.0        | 1.514          | 2.509    | 1.7     | 19.4 | 10 18         | 1 43.96                       | + 4 30.9        | 1.925          | 2.918    | 2.0     | 20.1 |
| 10 28         | 1 35.60                       | + 6 14.7        | 1.523          | 2.506    | 4.3     | 19.6 | 10 28         | 1 36.81                       | + 2 28.1        | 1.920          | 2.896    | 4.6     | 20.2 |
| 11 7          | 1 27.70                       | + 5 49.5        | 1.559          | 2.504    | 8.7     | 19.9 | 11 7          | 1 30.24                       | + 0 35.9        | 1.945          | 2.874    | 8.4     | 20.4 |
| 11 17         | 1 21.60                       | + 5 36.5        | 1.620          | 2.502    | 12.8    | 20.1 | 11 17         | 1 24.98                       | - 0 58.6        | 1.996          | 2.852    | 11.9    | 20.6 |
| 11 27         | 1 17.96                       | + 5 38.6        | 1.702          | 2.500    | 16.2    | 20.3 | 11 27         | 1 21.63                       | - 2 11.1        | 2.071          | 2.830    | 14.9    | 20.8 |
| <b>383098</b> | 2005 <i>SC</i> <sub>138</sub> |                 | 10 20.7 2°78   | 4°9/25.2 |         |      |               |                               |                 |                |          |         |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$          | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$          | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------|--------------|---------|------|---------------|-------------------------------|-----------------|----------|--------------|---------|------|
| <b>342565</b> | 2008 <i>UP</i> <sub>252</sub> | 10 20.7 265°48  |          | 1.5°/19.6 18 |         |      | <b>520481</b> | 2014 <i>KA</i> <sub>111</sub> | 10 20.7 183°28  |          | 3.7°/24.3 18 |         |      |
| 9 18          | 2 7.89                        | + 7 50.2        | 1.829    | 2.697        | 13.1    | 21.5 | 9 18          | 2 5.76                        | +23 41.9        | 2.061    | 2.877        | 13.8    | 21.3 |
| 9 28          | 2 2.06                        | + 7 28.6        | 1.745    | 2.680        | 9.6     | 21.3 | 9 28          | 2 0.34                        | +23 36.2        | 1.983    | 2.877        | 10.9    | 21.1 |
| 10 8          | 1 54.09                       | + 7 0.1         | 1.686    | 2.664        | 5.5     | 21.0 | 10 8          | 1 53.00                       | +23 12.5        | 1.928    | 2.877        | 7.6     | 20.9 |
| 10 18         | 1 44.69                       | + 6 28.4        | 1.653    | 2.647        | 1.7     | 20.7 | 10 18         | 1 44.46                       | +22 31.6        | 1.898    | 2.877        | 4.6     | 20.7 |
| 10 28         | 1 34.88                       | + 5 58.6        | 1.648    | 2.630        | 4.2     | 20.9 | 10 28         | 1 35.69                       | +21 36.8        | 1.897    | 2.877        | 4.0     | 20.7 |
| 11 7          | 1 25.78                       | + 5 35.8        | 1.672    | 2.612        | 8.5     | 21.1 | 11 7          | 1 27.68                       | +20 33.8        | 1.924    | 2.876        | 6.7     | 20.8 |
| 11 17         | 1 18.36                       | + 5 24.4        | 1.721    | 2.595        | 12.6    | 21.3 | 11 17         | 1 21.29                       | +19 29.5        | 1.978    | 2.876        | 10.0    | 21.0 |
| 11 27         | 1 13.33                       | + 5 27.1        | 1.792    | 2.577        | 16.0    | 21.5 | 11 27         | 1 17.10                       | +18 30.7        | 2.057    | 2.875        | 13.0    | 21.2 |
| <b>58588</b>  | 1997 <i>SV</i> <sub>23</sub>  | 10 20.7 305°12  |          | 0.4°/20.9 18 |         |      | <b>220787</b> | 2004 <i>TU</i> <sub>173</sub> | 10 20.7 336°27  |          | 0.3°/20.5 17 |         |      |
| 9 18          | 2 6.48                        | +12 54.1        | 1.459    | 2.330        | 15.6    | 19.3 | 9 18          | 2 11.50                       | + 7 49.8        | 1.818    | 2.680        | 13.5    | 18.8 |
| 9 28          | 2 1.52                        | +12 42.2        | 1.379    | 2.314        | 11.6    | 19.0 | 9 28          | 2 4.70                        | + 8 26.4        | 1.739    | 2.670        | 9.9     | 18.6 |
| 10 8          | 1 54.00                       | +12 17.2        | 1.321    | 2.298        | 6.9     | 18.7 | 10 8          | 1 55.64                       | + 8 59.9        | 1.683    | 2.660        | 5.7     | 18.3 |
| 10 18         | 1 44.69                       | +11 41.7        | 1.287    | 2.282        | 1.7     | 18.4 | 10 18         | 1 45.06                       | + 9 31.1        | 1.656    | 2.651        | 1.2     | 18.0 |
| 10 28         | 1 34.87                       | +11 1.2         | 1.280    | 2.267        | 3.8     | 18.5 | 10 28         | 1 34.06                       | +10 1.6         | 1.657    | 2.643        | 3.5     | 18.1 |
| 11 7          | 1 25.92                       | +10 22.9        | 1.299    | 2.252        | 9.1     | 18.7 | 11 7          | 1 23.84                       | +10 33.6        | 1.688    | 2.635        | 7.9     | 18.4 |
| 11 17         | 1 19.02                       | + 9 53.5        | 1.342    | 2.238        | 13.9    | 19.0 | 11 17         | 1 15.41                       | +11 9.2         | 1.745    | 2.628        | 11.9    | 18.6 |
| 11 27         | 1 15.01                       | + 9 38.5        | 1.405    | 2.224        | 17.9    | 19.2 | 11 27         | 1 9.51                        | +11 50.4        | 1.825    | 2.621        | 15.3    | 18.8 |
| <b>408984</b> | 2002 <i>SA</i> <sub>67</sub>  | 10 20.7 251°27  |          | 0.5°/20.1 18 |         |      | <b>150640</b> | 2001 <i>CQ</i> <sub>20</sub>  | 10 20.7 161°74  |          | 8.3°/ 9.9 18 |         |      |
| 9 18          | 2 1.01                        | +11 58.5        | 2.442    | 3.299        | 10.6    | 21.2 | 9 18          | 2 6.03                        | -23 25.5        | 3.048    | 3.864        | 9.8     | 20.1 |
| 9 28          | 1 56.52                       | +11 6.4         | 2.366    | 3.296        | 7.6     | 21.0 | 9 28          | 1 59.80                       | -24 20.2        | 3.015    | 3.870        | 8.8     | 20.0 |
| 10 8          | 1 50.64                       | +10 5.2         | 2.316    | 3.293        | 4.3     | 20.8 | 10 8          | 1 52.38                       | -25 1.1         | 3.006    | 3.876        | 8.3     | 20.0 |
| 10 18         | 1 43.91                       | + 8 58.6        | 2.294    | 3.290        | 0.9     | 20.5 | 10 18         | 1 44.30                       | -25 24.0        | 3.023    | 3.881        | 8.5     | 20.0 |
| 10 28         | 1 37.04                       | + 7 51.7        | 2.302    | 3.286        | 2.9     | 20.7 | 10 28         | 1 36.22                       | -25 25.9        | 3.066    | 3.885        | 9.3     | 20.1 |
| 11 7          | 1 30.74                       | + 6 49.7        | 2.340    | 3.283        | 6.3     | 20.9 | 11 7          | 1 28.79                       | -25 6.4         | 3.133    | 3.889        | 10.5    | 20.2 |
| 11 17         | 1 25.62                       | + 5 57.2        | 2.405    | 3.279        | 9.4     | 21.1 | 11 17         | 1 22.53                       | -24 26.5        | 3.221    | 3.893        | 11.8    | 20.3 |
| 11 27         | 1 22.17                       | + 5 17.5        | 2.494    | 3.276        | 12.1    | 21.3 | 11 27         | 1 17.83                       | -23 29.0        | 3.328    | 3.896        | 12.9    | 20.4 |
| <b>381735</b> | 2009 <i>RQ</i> <sub>53</sub>  | 10 20.7 249°92  |          | 0.6°/20.3 18 |         |      | <b>57566</b>  | 2001 <i>TU</i> <sub>54</sub>  | 10 20.7 282°98  |          | 1.8°/22.1 18 |         |      |
| 9 18          | 2 9.29                        | +10 9.3         | 1.633    | 2.500        | 14.5    | 21.0 | 9 18          | 2 6.01                        | +17 24.8        | 1.566    | 2.422        | 15.6    | 19.8 |
| 9 28          | 2 3.24                        | + 9 56.3        | 1.558    | 2.491        | 10.6    | 20.7 | 9 28          | 2 1.03                        | +17 3.0         | 1.487    | 2.411        | 11.8    | 19.6 |
| 10 8          | 1 54.83                       | + 9 34.2        | 1.505    | 2.483        | 6.1     | 20.4 | 10 8          | 1 53.64                       | +16 23.4        | 1.429    | 2.399        | 7.3     | 19.3 |
| 10 18         | 1 44.85                       | + 9 6.1         | 1.478    | 2.474        | 1.3     | 20.1 | 10 18         | 1 44.65                       | +15 28.2        | 1.396    | 2.388        | 2.8     | 19.0 |
| 10 28         | 1 34.50                       | + 8 37.0        | 1.480    | 2.464        | 3.9     | 20.3 | 10 28         | 1 35.24                       | +14 23.0        | 1.390    | 2.377        | 3.5     | 19.0 |
| 11 7          | 1 25.02                       | + 8 12.7        | 1.508    | 2.455        | 8.7     | 20.5 | 11 7          | 1 26.71                       | +13 16.1        | 1.411    | 2.366        | 8.3     | 19.3 |
| 11 17         | 1 17.49                       | + 7 58.1        | 1.562    | 2.446        | 13.0    | 20.8 | 11 17         | 1 20.15                       | +12 15.6        | 1.457    | 2.355        | 12.8    | 19.5 |
| 11 27         | 1 12.62                       | + 7 57.0        | 1.637    | 2.436        | 16.7    | 21.0 | 11 27         | 1 16.30                       | +11 28.7        | 1.524    | 2.344        | 16.7    | 19.8 |
| <b>222923</b> | 2002 <i>JZ</i> <sub>148</sub> | 10 20.7 56°54   |          | 0.9°/20.0 18 |         |      | <b>103643</b> | 2000 <i>CW</i> <sub>34</sub>  | 10 20.7 2°13    |          | 4.7°/25.4 18 |         |      |
| 9 18          | 2 6.27                        | + 8 33.3        | 2.065    | 2.928        | 12.0    | 20.1 | 9 18          | 2 3.78                        | +26 18.2        | 2.032    | 2.840        | 14.3    | 18.8 |
| 9 28          | 2 0.46                        | + 8 25.7        | 2.003    | 2.936        | 8.7     | 19.9 | 9 28          | 1 58.95                       | +26 21.2        | 1.958    | 2.843        | 11.4    | 18.6 |
| 10 8          | 1 52.95                       | + 8 12.5        | 1.966    | 2.944        | 4.9     | 19.7 | 10 8          | 1 52.22                       | +26 4.8         | 1.906    | 2.846        | 8.3     | 18.5 |
| 10 18         | 1 44.41                       | + 7 56.6        | 1.957    | 2.952        | 1.2     | 19.5 | 10 18         | 1 44.31                       | +25 29.1        | 1.879    | 2.850        | 5.6     | 18.3 |
| 10 28         | 1 35.76                       | + 7 41.5        | 1.976    | 2.960        | 3.3     | 19.7 | 10 28         | 1 36.19                       | +24 37.0        | 1.880    | 2.854        | 4.8     | 18.3 |
| 11 7          | 1 27.88                       | + 7 31.0        | 2.024    | 2.968        | 7.1     | 19.9 | 11 7          | 1 28.85                       | +23 34.3        | 1.908    | 2.858        | 6.9     | 18.4 |
| 11 17         | 1 21.52                       | + 7 28.3        | 2.099    | 2.976        | 10.5    | 20.1 | 11 17         | 1 23.12                       | +22 27.8        | 1.962    | 2.863        | 9.9     | 18.6 |
| 11 27         | 1 17.21                       | + 7 35.5        | 2.197    | 2.985        | 13.3    | 20.4 | 11 27         | 1 19.60                       | +21 24.9        | 2.041    | 2.868        | 12.8    | 18.8 |
| <b>161383</b> | 2003 <i>TH</i> <sub>15</sub>  | 10 20.7 32°95   |          | 2.9°/18.6 18 |         |      | <b>188964</b> | 2007 <i>HV</i> <sub>19</sub>  | 10 20.7 31°27   |          | 0.2°/20.6 18 |         |      |
| 9 18          | 2 5.03                        | + 6 5.9         | 1.427    | 2.313        | 15.0    | 19.6 | 9 18          | 2 1.85                        | +13 5.2         | 2.075    | 2.936        | 12.1    | 20.1 |
| 9 28          | 2 0.07                        | + 5 19.7        | 1.377    | 2.322        | 10.7    | 19.4 | 9 28          | 1 57.32                       | +12 19.6        | 2.009    | 2.939        | 8.8     | 19.9 |
| 10 8          | 1 52.89                       | + 4 27.3        | 1.350    | 2.331        | 6.2     | 19.2 | 10 8          | 1 51.19                       | +11 23.2        | 1.966    | 2.943        | 5.0     | 19.6 |
| 10 18         | 1 44.41                       | + 3 35.3        | 1.348    | 2.340        | 2.9     | 19.0 | 10 18         | 1 44.09                       | +10 20.1        | 1.952    | 2.947        | 1.0     | 19.4 |
| 10 28         | 1 35.83                       | + 2 51.1        | 1.372    | 2.350        | 5.6     | 19.2 | 10 28         | 1 36.86                       | + 9 15.7        | 1.966    | 2.951        | 3.0     | 19.5 |
| 11 7          | 1 28.36                       | + 2 20.9        | 1.422    | 2.361        | 9.9     | 19.5 | 11 7          | 1 30.34                       | + 8 16.1        | 2.008    | 2.955        | 6.8     | 19.8 |
| 11 17         | 1 22.91                       | + 2 8.6         | 1.495    | 2.372        | 13.9    | 19.7 | 11 17         | 1 25.24                       | + 7 26.3        | 2.077    | 2.960        | 10.3    | 20.0 |
| 11 27         | 1 20.05                       | + 2 15.4        | 1.589    | 2.383        | 17.3    | 20.0 | 11 27         | 1 22.05                       | + 6 50.2        | 2.170    | 2.965        | 13.2    | 20.2 |
| <b>447103</b> | 2004 <i>TQ</i> <sub>155</sub> | 10 20.7 330°56  |          | 1.5°/19.1 18 |         |      | <b>516294</b> | 2016 <i>WY</i> <sub>47</sub>  | 10 20.7 352°82  |          | 0.9°/21.4 18 |         |      |
| 9 18          | 2 1.26                        | + 9 50.9        | 2.050    | 2.920        | 11.8    | 21.3 | 9 18          | 2 6.75                        | +14 10.1        | 1.682    | 2.541        | 14.5    | 21.3 |
| 9 28          | 1 56.92                       | + 8 44.8        | 1.980    | 2.917        | 8.5     | 21.1 | 9 28          | 2 1.29                        | +14 1.6         | 1.612    | 2.540        | 10.7    | 21.0 |
| 10 8          | 1 50.95                       | + 7 29.3        | 1.934    | 2.914        | 4.8     | 20.9 | 10 8          | 1 53.66                       | +13 40.7        | 1.566    | 2.540        | 6.4     | 20.8 |
| 10 18         | 1 44.00                       | + 6 9.8         | 1.917    | 2.911        | 1.6     | 20.6 | 10 18         | 1 44.65                       | +13 9.8         | 1.545    | 2.539        | 1.9     | 20.5 |
| 10 28         | 1 36.88                       | + 4 52.7        | 1.928    | 2.908        | 3.9     | 20.8 | 10 28         | 1 35.36                       | +12 33.6        | 1.552    | 2.539        | 3.3     | 20.6 |
| 11 7          | 1 30.45                       | + 3 44.6        | 1.968    | 2.906        | 7.7     | 21.0 | 11 7          | 1 26.98                       | +11 58.0        | 1.586    | 2.538        | 7.8     | 20.9 |
| 11 17         | 1 25.40                       | + 2 50.6        | 2.034    | 2.904        | 11.1    | 21.2 | 11 17         | 1 20.44                       | +11 28.9        | 1.645    | 2.538        | 11.9    | 21.1 |
| 11 27         | 1 22.27                       | + 2 13.9        | 2.122    | 2.902        | 14.0    | 21.4 | 11 27         | 1 16.41                       | +11 10.8        | 1.727    | 2.538        | 15.4    | 21.4 |
| <b>480160</b> | 2015 <i>FE</i> <sub>293</sub> | 10 20.7 223°56  |          | 0.8°/21.3 17 |         |      | <b>388195</b> | 2006 <i>DD</i> <sub>94</sub>  | 10 20.7 186°30  |          | 1.2°/21.7 18 |         |      |
| 9 18          | 2 9.84                        | +14 18.7        | 1.801    | 2.652        | 14.1    | 22.1 | 9 18          | 2 7.93                        | +15 31.2        | 2.079    | 2.922        | 12.7    | 22.0 |
| 9 28          | 2 3.52                        | +14 6.1         | 1.719    | 2.643        | 10.5    | 21.9 | 9 28          | 2 1.81                        | +15 19.0        | 2.003    | 2.922        | 9.5     | 21.8 |
| 10 8          | 1 54.95                       | +13 40.9        | 1.661    | 2.634        | 6.3     | 21.6 | 10 8          | 1 53.83                       | +14 55.2        | 1.951    | 2.921        | 5.8     | 21.5 |
| 10 18         | 1 44.90                       | +13 5.4         | 1.629    | 2.624        | 1.8     | 21.3 | 10 18         | 1 44.68                       | +14 21.5        | 1.927    | 2.920        | 1.9     | 21.3 |
| 10 28         | 1 34.46                       | +12 24.0        | 1.626    | 2.613        | 3.3     | 21.4 | 10 28         | 1 35.30                       | +13 42.0        | 1.932    | 2.919        | 2.9     | 21.4 |
| 11 7          | 1 24.83                       | +11 42.7        | 1.652    | 2.602        | 7.8     | 21.6 | 11 7          | 1 26.67                       | +13 1.8         | 1.967    | 2.917        | 6.7     | 21.6 |
| 11 17         | 1 17.01                       | +11 7.6         | 1.704    | 2.590        | 12.0    | 21.8 | 11 17         | 1 19.61                       | +12 25.9        | 2.028    | 2.914        | 10.3    | 21.8 |
| 11 27         | 1 11.72                       | +10 43.6        | 1.778    | 2.577        | 15.5    | 22.1 | 11 27         | 1 14.71                       | +11 59.0        | 2.113    | 2.911        | 13.4    | 22.0 |
| <b>362658</b> | 2011 <i>UN</i>                | 10 20.7 310°75  |          | 7.9°/15.6 17 |         |      | <b>91441</b>  | 1999 <i>RU</i>                |                 |          |              |         |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$          | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$          | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------|--------------|---------|------|---------------|-------------------------------|-----------------|----------|--------------|---------|------|
| <b>483916</b> | 2006 <i>BY</i> <sub>42</sub>  | 10 20.7 255°83  |          | 4.7°/15.4 17 |         |      | <b>156089</b> | 2001 <i>SK</i> <sub>194</sub> | 10 20.7 330°67  |          | 1.8°/21.9 18 |         |      |
| 9 18          | 2 3.07                        | - 3 21.9        | 2.467    | 3.340        | 10.0    | 22.2 | 9 18          | 2 6.97                        | +15 25.7        | 1.344    | 2.212        | 16.9    | 20.1 |
| 9 28          | 1 58.05                       | - 4 20.9        | 2.393    | 3.325        | 7.5     | 22.0 | 9 28          | 2 2.05                        | +15 30.6        | 1.272    | 2.204        | 12.7    | 19.8 |
| 10 8          | 1 51.57                       | - 5 18.5        | 2.345    | 3.310        | 5.4     | 21.9 | 10 8          | 1 54.38                       | +15 19.9        | 1.221    | 2.195        | 7.8     | 19.5 |
| 10 18         | 1 44.19                       | - 6 9.4         | 2.325    | 3.294        | 4.8     | 21.8 | 10 18         | 1 44.87                       | +14 55.2        | 1.194    | 2.187        | 2.8     | 19.2 |
| 10 28         | 1 36.60                       | - 6 48.5        | 2.334    | 3.279        | 6.4     | 21.9 | 10 28         | 1 34.88                       | +14 21.1        | 1.193    | 2.180        | 3.9     | 19.2 |
| 11 7          | 1 29.55                       | - 7 12.2        | 2.371    | 3.263        | 8.9     | 22.0 | 11 7          | 1 25.91                       | +13 44.9        | 1.217    | 2.174        | 9.1     | 19.5 |
| 11 17         | 1 23.67                       | - 7 18.5        | 2.432    | 3.246        | 11.5    | 22.2 | 11 17         | 1 19.20                       | +13 14.1        | 1.264    | 2.168        | 13.9    | 19.8 |
| 11 27         | 1 19.47                       | - 7 7.1         | 2.515    | 3.230        | 13.7    | 22.3 | 11 27         | 1 15.57                       | +12 55.1        | 1.332    | 2.162        | 18.1    | 20.0 |
| <b>348130</b> | 2004 <i>BV</i> <sub>80</sub>  | 10 20.7 158°07  |          | 5°0/25.9 18  |         |      | <b>285732</b> | 2000 <i>SU</i> <sub>345</sub> | 10 20.7 79°64   |          | 3°2/22.7 17  |         |      |
| 9 18          | 2 7.72                        | +28 20.3        | 2.361    | 3.143        | 13.3    | 21.4 | 9 18          | 2 15.89                       | +18 45.0        | 1.328    | 2.174        | 18.4    | 21.0 |
| 9 28          | 2 1.61                        | +28 30.0        | 2.283    | 3.148        | 10.8    | 21.3 | 9 28          | 2 8.02                        | +18 56.9        | 1.288    | 2.204        | 13.8    | 20.9 |
| 10 8          | 1 53.70                       | +28 21.4        | 2.227    | 3.154        | 8.1     | 21.1 | 10 8          | 1 57.47                       | +18 49.3        | 1.269    | 2.234        | 8.8     | 20.7 |
| 10 18         | 1 44.66                       | +27 54.1        | 2.198    | 3.158        | 5.8     | 21.0 | 10 18         | 1 45.46                       | +18 23.5        | 1.274    | 2.263        | 4.1     | 20.5 |
| 10 28         | 1 35.41                       | +27 10.0        | 2.197    | 3.163        | 5.0     | 20.9 | 10 28         | 1 33.58                       | +17 44.9        | 1.307    | 2.292        | 4.3     | 20.6 |
| 11 7          | 1 26.90                       | +26 13.7        | 2.224    | 3.167        | 6.6     | 21.0 | 11 7          | 1 23.33                       | +17 1.3         | 1.366    | 2.320        | 8.6     | 20.9 |
| 11 17         | 1 19.92                       | +25 11.4        | 2.279    | 3.170        | 9.1     | 21.2 | 11 17         | 1 15.76                       | +16 21.0        | 1.450    | 2.348        | 12.9    | 21.2 |
| 11 27         | 1 15.04                       | +24 9.9         | 2.360    | 3.173        | 11.7    | 21.4 | 11 27         | 1 11.39                       | +15 50.6        | 1.556    | 2.375        | 16.5    | 21.5 |
| <b>333823</b> | 2012 <i>HX</i> <sub>61</sub>  | 10 20.7 192°77  |          | 2°7/18.7 17  |         |      | <b>326584</b> | 2002 <i>QQ</i> <sub>95</sub>  | 10 20.7 49°31   |          | 2°9/18.9 15  |         |      |
| 9 18          | 2 7.86                        | + 7 1.2         | 1.517    | 2.395        | 14.7    | 21.1 | 9 18          | 2 8.68                        | + 6 24.7        | 1.156    | 2.047        | 17.3    | 20.6 |
| 9 28          | 2 2.19                        | + 6 4.5         | 1.454    | 2.394        | 10.6    | 20.9 | 9 28          | 2 2.98                        | + 5 43.9        | 1.119    | 2.065        | 12.4    | 20.4 |
| 10 8          | 1 54.21                       | + 4 59.5        | 1.414    | 2.393        | 6.1     | 20.6 | 10 8          | 1 54.65                       | + 4 56.6        | 1.102    | 2.084        | 7.1     | 20.1 |
| 10 18         | 1 44.79                       | + 3 52.7        | 1.399    | 2.392        | 2.7     | 20.4 | 10 18         | 1 44.86                       | + 4 9.8         | 1.110    | 2.103        | 3.0     | 19.9 |
| 10 28         | 1 35.14                       | + 2 52.1        | 1.413    | 2.390        | 5.5     | 20.6 | 10 28         | 1 35.13                       | + 3 31.8        | 1.142    | 2.123        | 6.0     | 20.2 |
| 11 7          | 1 26.51                       | + 2 5.3         | 1.452    | 2.388        | 10.0    | 20.8 | 11 7          | 1 26.91                       | + 3 9.3         | 1.199    | 2.143        | 10.9    | 20.5 |
| 11 17         | 1 19.89                       | + 1 37.0        | 1.516    | 2.386        | 14.2    | 21.1 | 11 17         | 1 21.20                       | + 3 5.6         | 1.279    | 2.163        | 15.3    | 20.9 |
| 11 27         | 1 15.94                       | + 1 29.6        | 1.600    | 2.384        | 17.7    | 21.3 | 11 27         | 1 18.52                       | + 3 21.6        | 1.377    | 2.184        | 18.9    | 21.2 |
| <b>282049</b> | 1999 <i>RE</i> <sub>66</sub>  | 10 20.7 31°70   |          | 5°0/16.9 18  |         |      | <b>322123</b> | 2010 <i>VF</i> <sub>171</sub> | 10 20.7 97°13   |          | 3°4/17.7 18  |         |      |
| 9 18          | 2 2.83                        | + 3 30.7        | 1.199    | 2.100        | 16.1    | 19.5 | 9 18          | 2 5.67                        | + 1 4.9         | 2.179    | 3.051        | 11.1    | 20.5 |
| 9 28          | 1 58.66                       | + 2 2.5         | 1.165    | 2.115        | 11.6    | 19.3 | 9 28          | 1 59.94                       | + 0 34.6        | 2.121    | 3.057        | 8.1     | 20.3 |
| 10 8          | 1 52.13                       | + 0 31.0        | 1.152    | 2.132        | 7.1     | 19.1 | 10 8          | 1 52.64                       | + 0 4.2         | 2.089    | 3.063        | 5.0     | 20.2 |
| 10 18         | 1 44.31                       | - 0 53.5        | 1.163    | 2.149        | 5.0     | 19.0 | 10 18         | 1 44.43                       | - 0 22.1        | 2.084    | 3.070        | 3.4     | 20.1 |
| 10 28         | 1 36.51                       | - 2 0.5         | 1.199    | 2.168        | 7.8     | 19.2 | 10 28         | 1 36.13                       | - 0 39.9        | 2.109    | 3.076        | 5.1     | 20.2 |
| 11 7          | 1 30.01                       | - 2 43.1        | 1.259    | 2.187        | 12.0    | 19.5 | 11 7          | 1 28.57                       | - 0 46.1        | 2.162    | 3.082        | 8.2     | 20.4 |
| 11 17         | 1 25.69                       | - 2 58.7        | 1.340    | 2.207        | 15.9    | 19.8 | 11 17         | 1 22.42                       | - 0 39.0        | 2.240    | 3.088        | 11.1    | 20.6 |
| 11 27         | 1 24.06                       | - 2 48.1        | 1.440    | 2.228        | 19.1    | 20.1 | 11 27         | 1 18.18                       | - 0 18.0        | 2.341    | 3.094        | 13.6    | 20.8 |
| <b>126169</b> | 2002 <i>AR</i> <sub>7</sub>   | 10 20.7 205°36  |          | 7°1/14.7 18  |         |      | <b>348745</b> | 2006 <i>HB</i> <sub>10</sub>  | 10 20.7 335°20  |          | 5°3/16.8 18  |         |      |
| 9 18          | 2 7.60                        | - 6 57.5        | 1.841    | 2.715        | 12.7    | 19.4 | 9 18          | 2 5.08                        | + 0 3.7         | 1.484    | 2.374        | 14.3    | 20.3 |
| 9 28          | 2 1.64                        | - 8 7.6         | 1.784    | 2.712        | 9.9     | 19.3 | 9 28          | 2 0.21                        | - 0 54.5        | 1.424    | 2.368        | 10.5    | 20.1 |
| 10 8          | 1 53.74                       | - 9 11.8        | 1.752    | 2.709        | 7.6     | 19.1 | 10 8          | 1 53.10                       | - 1 53.2        | 1.387    | 2.362        | 6.9     | 19.9 |
| 10 18         | 1 44.67                       | - 10 2.7        | 1.747    | 2.705        | 7.2     | 19.1 | 10 18         | 1 44.56                       | - 2 44.9        | 1.375    | 2.357        | 5.4     | 19.8 |
| 10 28         | 1 35.45                       | - 10 33.7       | 1.768    | 2.700        | 9.0     | 19.2 | 10 28         | 1 35.78                       | - 3 21.7        | 1.389    | 2.352        | 7.7     | 19.9 |
| 11 7          | 1 27.09                       | - 10 41.2       | 1.815    | 2.696        | 11.8    | 19.4 | 11 7          | 1 27.97                       | - 3 38.0        | 1.428    | 2.348        | 11.5    | 20.1 |
| 11 17         | 1 20.43                       | - 10 24.5       | 1.885    | 2.691        | 14.6    | 19.5 | 11 17         | 1 22.10                       | - 3 31.6        | 1.489    | 2.344        | 15.3    | 20.4 |
| 11 27         | 1 16.05                       | - 9 45.6        | 1.974    | 2.685        | 17.1    | 19.7 | 11 27         | 1 18.82                       | - 3 2.6         | 1.569    | 2.340        | 18.5    | 20.6 |
| <b>73122</b>  | 2002 <i>GO</i> <sub>57</sub>  | 10 20.7 114°46  |          | 3°0/23.7 18  |         |      | <b>98930</b>  | 2001 <i>CB</i> <sub>5</sub>   | 10 20.7 142°85  |          | 4°1/24.2 18  |         |      |
| 9 18          | 2 6.91                        | +22 29.9        | 1.947    | 2.770        | 14.3    | 19.8 | 9 18          | 2 10.24                       | +23 18.8        | 2.100    | 2.909        | 13.9    | 19.8 |
| 9 28          | 2 1.08                        | +22 1.3         | 1.883    | 2.785        | 11.0    | 19.6 | 9 28          | 2 3.56                        | +23 39.9        | 2.028    | 2.917        | 10.9    | 19.6 |
| 10 8          | 1 53.38                       | +21 14.1        | 1.843    | 2.799        | 7.3     | 19.4 | 10 8          | 1 54.89                       | +23 44.8        | 1.979    | 2.925        | 7.7     | 19.5 |
| 10 18         | 1 44.58                       | +20 10.4        | 1.829    | 2.813        | 3.9     | 19.2 | 10 18         | 1 44.95                       | +23 33.0        | 1.956    | 2.932        | 4.8     | 19.3 |
| 10 28         | 1 35.71                       | +18 55.4        | 1.843    | 2.827        | 3.5     | 19.2 | 10 28         | 1 34.78                       | +23 6.7         | 1.962    | 2.938        | 4.4     | 19.3 |
| 11 7          | 1 27.79                       | +17 36.3        | 1.887    | 2.840        | 6.7     | 19.4 | 11 7          | 1 25.44                       | +22 30.4        | 1.997    | 2.945        | 6.8     | 19.5 |
| 11 17         | 1 21.59                       | +16 20.5        | 1.957    | 2.853        | 10.2    | 19.7 | 11 17         | 1 17.79                       | +21 50.0        | 2.059    | 2.951        | 9.9     | 19.7 |
| 11 27         | 1 17.65                       | +15 14.6        | 2.052    | 2.866        | 13.2    | 19.9 | 11 27         | 1 12.47                       | +21 11.8        | 2.145    | 2.956        | 12.8    | 19.9 |
| <b>15034</b>  | Décines                       | 10 20.7 176°79  |          | 2°6/18.6 18  |         |      | <b>21419</b>  | Devience                      | 10 20.7 219°03  |          | 1°2/21.6 18  |         |      |
| 9 18          | 2 8.56                        | + 5 19.7        | 1.903    | 2.771        | 12.7    | 18.7 | 9 18          | 2 9.29                        | +15 34.9        | 1.655    | 2.507        | 15.0    | 19.5 |
| 9 28          | 2 2.29                        | + 4 39.0        | 1.838    | 2.773        | 9.1     | 18.4 | 9 28          | 2 3.28                        | +15 17.9        | 1.578    | 2.502        | 11.2    | 19.3 |
| 10 8          | 1 54.10                       | + 3 53.7        | 1.797    | 2.775        | 5.3     | 18.2 | 10 8          | 1 54.91                       | +14 46.2        | 1.523    | 2.495        | 6.8     | 19.0 |
| 10 18         | 1 44.75                       | + 3 8.6         | 1.784    | 2.776        | 2.6     | 18.1 | 10 18         | 1 44.98                       | +14 1.9         | 1.495    | 2.489        | 2.2     | 18.7 |
| 10 28         | 1 35.24                       | + 2 29.4        | 1.801    | 2.776        | 4.8     | 18.2 | 10 28         | 1 34.69                       | +13 10.3        | 1.495    | 2.481        | 3.4     | 18.8 |
| 11 7          | 1 26.57                       | + 2 1.1         | 1.845    | 2.776        | 8.6     | 18.4 | 11 7          | 1 25.30                       | +12 18.3        | 1.522    | 2.474        | 8.1     | 19.0 |
| 11 17         | 1 19.58                       | + 1 47.1        | 1.915    | 2.775        | 12.2    | 18.7 | 11 17         | 1 17.87                       | +11 33.0        | 1.575    | 2.466        | 12.5    | 19.3 |
| 11 27         | 1 14.84                       | + 1 49.0        | 2.007    | 2.774        | 15.1    | 18.9 | 11 27         | 1 13.12                       | +11 0.2         | 1.650    | 2.457        | 16.2    | 19.5 |
| <b>394133</b> | 2006 <i>HE</i> <sub>152</sub> | 10 20.7 356°64  |          | 16°7/17.6 17 |         |      | <b>191549</b> | 2003 <i>UL</i> <sub>293</sub> | 10 20.7 328°10  |          | 8°8/11.2 18  |         |      |
| 9 18          | 2 27.10                       | -22 32.6        | 0.924    | 1.783        | 23.5    | 20.2 | 9 18          | 2 1.93                        | -13 39.7        | 2.025    | 2.896        | 11.9    | 19.4 |
| 9 28          | 2 17.29                       | -22 43.5        | 0.881    | 1.780        | 20.3    | 20.0 | 9 28          | 1 57.46                       | -15 6.8         | 1.975    | 2.887        | 10.0    | 19.2 |
| 10 8          | 2 3.25                        | -22 15.9        | 0.854    | 1.778        | 17.7    | 19.8 | 10 8          | 1 51.32                       | -16 23.4        | 1.949    | 2.879        | 8.8     | 19.1 |
| 10 18         | 1 46.73                       | -20 57.0        | 0.847    | 1.777        | 16.7    | 19.8 | 10 18         | 1 44.17                       | -17 21.8        | 1.948    | 2.871        | 9.1     | 19.1 |
| 10 28         | 1 30.30                       | -18 43.0        | 0.861    | 1.777        | 17.9    | 19.9 | 10 28         | 1 36.87                       | -17 55.9        | 1.972    | 2.863        | 10.6    | 19.2 |
| 11 7          | 1 16.35                       | -15 42.5        | 0.896    | 1.778        | 20.7    | 20.0 | 11 7          | 1 30.28                       | -18 2.9         | 2.020    | 2.856        | 12.7    | 19.4 |
| 11 17         | 1 6.42                        | -12 11.3        | 0.952    | 1.779        | 24.0    | 20.3 | 11 17         | 1 25.13                       | -17 43.1        | 2.089    | 2.849        | 14.9    | 19.5 |
| 11 27         | 1 1.11                        | - 8 25.2        | 1.024    | 1.781        | 27.1    | 20.5 | 11 27         | 1 21.95                       | -16 58.9        | 2.175    | 2.842        | 16.8    | 19.7 |
| <b>269208</b> | 2008 <i>KA</i> <sub>9</sub>   | 10 20.7 242°17  |          | 3°5/18.3 18  |         |      | <b>222906</b> | 2002 <i>HQ</i> <sub>6</sub>   | 10 20.7 60°46   |          | 2°8/23.9 18  |         |      |
| 9 18          | 2 8.66                        | + 3 46.5        | 1.535    | 2.41         |         |      |               |                               |                 |          |              |         |      |

EPHEMERIDES

10 20.7

10 20.8

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------------|----------|---------|------|---------------|-------------------------------|-----------------|----------------|----------|---------|------|
| <b>23603</b>  | 1995 <i>YM</i> <sub>23</sub>  |                 | 10 20.7 292°23 | 5°6/16.8 | 18      |      | <b>452049</b> | 2014 <i>OC</i> <sub>243</sub> |                 | 10 20.8 307°92 | 0°6/20.2 | 18      |      |
| 9 18          | 2 8.39                        | - 2 38.2        | 1.697          | 2.575    | 13.4    | 19.0 | 9 18          | 2 4.42                        | +10 24.0        | 2.084          | 2.946    | 11.9    | 21.2 |
| 9 28          | 2 2.61                        | - 3 16.8        | 1.617          | 2.553    | 10.1    | 18.7 | 9 28          | 1 59.26                       | + 9 58.8        | 2.013          | 2.945    | 8.7     | 21.0 |
| 10 8          | 1 54.54                       | - 3 53.1        | 1.561          | 2.531    | 6.9     | 18.5 | 10 8          | 1 52.39                       | + 9 25.7        | 1.966          | 2.943    | 4.9     | 20.7 |
| 10 18         | 1 44.93                       | - 4 20.9        | 1.531          | 2.508    | 5.6     | 18.4 | 10 18         | 1 44.47                       | + 8 48.0        | 1.947          | 2.942    | 1.1     | 20.5 |
| 10 28         | 1 34.87                       | - 4 33.6        | 1.528          | 2.486    | 7.7     | 18.4 | 10 28         | 1 36.35                       | + 8 10.2        | 1.956          | 2.940    | 3.2     | 20.6 |
| 11 7          | 1 25.56                       | - 4 26.8        | 1.551          | 2.463    | 11.3    | 18.6 | 11 7          | 1 28.94                       | + 7 37.1        | 1.994          | 2.939    | 7.1     | 20.9 |
| 11 17         | 1 18.04                       | - 3 59.1        | 1.597          | 2.441    | 15.0    | 18.8 | 11 17         | 1 22.96                       | + 7 12.8        | 2.058          | 2.938    | 10.6    | 21.1 |
| 11 27         | 1 13.05                       | - 3 10.8        | 1.664          | 2.419    | 18.2    | 19.0 | 11 27         | 1 18.98                       | + 7 0.4         | 2.146          | 2.936    | 13.5    | 21.3 |
| <b>313382</b> | 2002 <i>LG</i> <sub>33</sub>  |                 | 10 20.7 157°41 | 6°3/13.1 | 18      |      | <b>74332</b>  | 1998 <i>VB</i> <sub>9</sub>   |                 | 10 20.8 325°39 | 2°2/22.7 | 18      |      |
| 9 18          | 2 2.61                        | - 9 31.8        | 2.506          | 3.374    | 10.0    | 20.5 | 9 18          | 2 1.34                        | +20 13.8        | 1.533          | 2.387    | 15.9    | 18.9 |
| 9 28          | 1 57.60                       | -10 48.6        | 2.459          | 3.378    | 7.9     | 20.4 | 9 28          | 1 57.72                       | +19 26.3        | 1.451          | 2.373    | 12.1    | 18.6 |
| 10 8          | 1 51.27                       | -11 58.7        | 2.437          | 3.381    | 6.5     | 20.3 | 10 8          | 1 51.81                       | +18 15.5        | 1.390          | 2.359    | 7.8     | 18.3 |
| 10 18         | 1 44.17                       | -12 56.6        | 2.444          | 3.384    | 6.5     | 20.3 | 10 18         | 1 44.38                       | +16 44.4        | 1.354          | 2.345    | 3.3     | 18.0 |
| 10 28         | 1 37.00                       | -13 37.4        | 2.478          | 3.387    | 7.9     | 20.4 | 10 28         | 1 36.58                       | +15 0.5         | 1.345          | 2.332    | 3.5     | 18.0 |
| 11 7          | 1 30.44                       | -13 58.3        | 2.538          | 3.390    | 9.9     | 20.5 | 11 7          | 1 29.63                       | +13 14.3        | 1.362          | 2.320    | 8.2     | 18.3 |
| 11 17         | 1 25.08                       | -13 58.8        | 2.621          | 3.393    | 11.9    | 20.7 | 11 17         | 1 24.55                       | +11 36.4        | 1.405          | 2.309    | 12.8    | 18.5 |
| 11 27         | 1 21.35                       | -13 39.8        | 2.725          | 3.395    | 13.7    | 20.8 | 11 27         | 1 22.08                       | +10 15.7        | 1.469          | 2.298    | 16.7    | 18.7 |
| <b>396491</b> | 2014 <i>FK</i> <sub>49</sub>  |                 | 10 20.7 163°36 | 1°2/19.6 | 18      |      | <b>196488</b> | 2003 <i>KM</i> <sub>12</sub>  |                 | 10 20.8 323°82 | 1°9/17.3 | 18      |      |
| 9 18          | 2 7.47                        | + 7 54.7        | 2.541          | 3.394    | 10.4    | 22.0 | 9 18          | 1 56.12                       | + 1 58.2        | 4.290          | 5.157    | 6.2     | 20.0 |
| 9 28          | 2 1.10                        | + 7 30.5        | 2.473          | 3.401    | 7.5     | 21.9 | 9 28          | 1 52.56                       | + 1 21.8        | 4.221          | 5.155    | 4.4     | 19.9 |
| 10 8          | 1 53.28                       | + 7 1.4         | 2.431          | 3.408    | 4.2     | 21.7 | 10 8          | 1 48.27                       | + 0 44.7        | 4.180          | 5.154    | 2.7     | 19.8 |
| 10 18         | 1 44.61                       | + 6 30.5        | 2.419          | 3.413    | 1.3     | 21.5 | 10 18         | 1 43.55                       | + 0 9.2         | 4.169          | 5.153    | 1.9     | 19.7 |
| 10 28         | 1 35.83                       | + 6 1.2         | 2.437          | 3.418    | 3.2     | 21.6 | 10 28         | 1 38.77                       | - 0 22.2        | 4.188          | 5.152    | 3.0     | 19.8 |
| 11 7          | 1 27.70                       | + 5 37.4        | 2.486          | 3.422    | 6.4     | 21.8 | 11 7          | 1 34.27                       | - 0 47.4        | 4.237          | 5.151    | 4.7     | 19.9 |
| 11 17         | 1 20.85                       | + 5 21.7        | 2.563          | 3.425    | 9.3     | 22.0 | 11 17         | 1 30.39                       | - 1 5.0         | 4.313          | 5.150    | 6.4     | 20.0 |
| 11 27         | 1 15.75                       | + 5 16.5        | 2.664          | 3.428    | 11.8    | 22.2 | 11 27         | 1 27.40                       | - 1 13.9        | 4.414          | 5.149    | 7.9     | 20.1 |
| <b>171108</b> | 2005 <i>EM</i> <sub>289</sub> |                 | 10 20.7 219°74 | 4°7/16.6 | 18      |      | <b>31026</b>  | 1996 <i>GB</i> <sub>7</sub>   |                 | 10 20.8 276°39 | 0°5/20.5 | 18      |      |
| 9 18          | 2 6.14                        | - 1 2.7         | 1.999          | 2.874    | 11.8    | 20.2 | 9 18          | 2 9.86                        | +10 49.8        | 1.338          | 2.213    | 16.5    | 18.5 |
| 9 28          | 2 0.51                        | - 1 57.2        | 1.934          | 2.869    | 8.7     | 20.0 | 9 28          | 2 4.16                        | +10 36.3        | 1.266          | 2.204    | 12.2    | 18.3 |
| 10 8          | 1 53.10                       | - 2 51.2        | 1.893          | 2.864    | 5.8     | 19.8 | 10 8          | 1 55.66                       | +10 11.2        | 1.216          | 2.194    | 7.1     | 18.0 |
| 10 18         | 1 44.59                       | - 3 38.9        | 1.880          | 2.858    | 4.7     | 19.8 | 10 18         | 1 45.24                       | + 9 37.9        | 1.189          | 2.185    | 1.5     | 17.6 |
| 10 28         | 1 35.89                       | - 4 14.3        | 1.896          | 2.852    | 6.6     | 19.9 | 10 28         | 1 34.34                       | + 9 2.7         | 1.190          | 2.175    | 4.4     | 17.8 |
| 11 7          | 1 27.94                       | - 4 33.3        | 1.938          | 2.846    | 9.7     | 20.0 | 11 7          | 1 24.49                       | + 8 32.7        | 1.215          | 2.166    | 9.9     | 18.0 |
| 11 17         | 1 21.51                       | - 4 33.7        | 2.005          | 2.839    | 12.8    | 20.2 | 11 17         | 1 16.96                       | + 8 14.4        | 1.265          | 2.157    | 14.8    | 18.3 |
| 11 27         | 1 17.16                       | - 4 15.4        | 2.093          | 2.833    | 15.4    | 20.4 | 11 27         | 1 12.57                       | + 8 12.0        | 1.334          | 2.147    | 19.0    | 18.6 |
| <b>314435</b> | 2005 <i>UU</i> <sub>513</sub> |                 | 10 20.7 272°34 | 1°7/19.3 | 18      |      | <b>312459</b> | 2008 <i>QG</i> <sub>44</sub>  |                 | 10 20.8 21°76  | 5°9/ 9.9 | 18      |      |
| 9 18          | 2 6.39                        | + 6 9.7         | 2.125          | 2.991    | 11.6    | 20.4 | 9 18          | 1 57.39                       | -18 44.8        | 3.941          | 4.781    | 7.3     | 19.6 |
| 9 28          | 2 0.67                        | + 5 55.1        | 2.050          | 2.984    | 8.4     | 20.2 | 9 28          | 1 53.52                       | -19 38.2        | 3.903          | 4.784    | 6.3     | 19.5 |
| 10 8          | 1 53.20                       | + 5 36.5        | 1.999          | 2.977    | 4.8     | 20.0 | 10 8          | 1 48.83                       | -20 23.1        | 3.891          | 4.787    | 5.9     | 19.5 |
| 10 18         | 1 44.63                       | + 5 17.2        | 1.976          | 2.970    | 1.8     | 19.8 | 10 18         | 1 43.68                       | -20 56.4        | 3.906          | 4.790    | 6.1     | 19.5 |
| 10 28         | 1 35.81                       | + 5 0.9         | 1.983          | 2.963    | 3.9     | 19.9 | 10 28         | 1 38.47                       | -21 15.6        | 3.947          | 4.793    | 6.9     | 19.6 |
| 11 7          | 1 27.66                       | + 4 51.6        | 2.018          | 2.955    | 7.5     | 20.1 | 11 7          | 1 33.64                       | -21 19.4        | 4.012          | 4.796    | 7.9     | 19.7 |
| 11 17         | 1 20.95                       | + 4 52.1        | 2.079          | 2.948    | 10.9    | 20.3 | 11 17         | 1 29.54                       | -21 8.0         | 4.100          | 4.799    | 9.0     | 19.8 |
| 11 27         | 1 16.26                       | + 5 4.2         | 2.164          | 2.941    | 13.8    | 20.5 | 11 27         | 1 26.47                       | -20 42.1        | 4.208          | 4.802    | 10.1    | 19.9 |
| <b>44841</b>  | 1999 <i>TP</i> <sub>284</sub> |                 | 10 20.7 59°87  | 6°4/16.9 | 18      |      | <b>320036</b> | 2007 <i>DZ</i> <sub>105</sub> |                 | 10 20.8 126°87 | 0°1/20.8 | 18      |      |
| 9 18          | 2 10.11                       | - 1 46.2        | 1.227          | 2.119    | 16.5    | 19.0 | 9 18          | 2 4.07                        | +12 39.8        | 2.348          | 3.200    | 11.1    | 21.8 |
| 9 28          | 2 3.86                        | - 2 42.6        | 1.194          | 2.137    | 12.2    | 18.8 | 9 28          | 1 58.80                       | +12 13.5        | 2.280          | 3.206    | 8.1     | 21.6 |
| 10 8          | 1 55.11                       | - 3 34.8        | 1.182          | 2.156    | 8.1     | 18.6 | 10 8          | 1 52.04                       | +11 38.5        | 2.238          | 3.213    | 4.7     | 21.4 |
| 10 18         | 1 45.01                       | - 4 14.5        | 1.195          | 2.174    | 6.5     | 18.6 | 10 18         | 1 44.39                       | +10 57.7        | 2.223          | 3.218    | 1.0     | 21.1 |
| 10 28         | 1 35.02                       | - 4 34.0        | 1.232          | 2.193    | 8.8     | 18.8 | 10 28         | 1 36.62                       | +10 15.2        | 2.239          | 3.224    | 2.6     | 21.3 |
| 11 7          | 1 26.52                       | - 4 29.8        | 1.294          | 2.212    | 12.6    | 19.0 | 11 7          | 1 29.51                       | + 9 35.4        | 2.283          | 3.230    | 6.2     | 21.5 |
| 11 17         | 1 20.45                       | - 4 1.9         | 1.377          | 2.232    | 16.3    | 19.3 | 11 17         | 1 23.71                       | + 9 2.5         | 2.355          | 3.235    | 9.3     | 21.7 |
| 11 27         | 1 17.32                       | - 3 13.0        | 1.478          | 2.251    | 19.4    | 19.6 | 11 27         | 1 19.69                       | + 8 39.6        | 2.451          | 3.241    | 12.0    | 21.9 |
| <b>247288</b> | 2001 <i>SC</i> <sub>250</sub> |                 | 10 20.8 16°09  | 1°3/19.7 | 18      |      | <b>471061</b> | 2009 <i>VD</i> <sub>26</sub>  |                 | 10 20.8 306°91 | 0°8/20.3 | 18      |      |
| 9 18          | 2 4.66                        | + 7 12.9        | 2.082          | 2.950    | 11.7    | 19.9 | 9 18          | 2 6.74                        | +10 30.0        | 1.378          | 2.256    | 15.9    | 21.0 |
| 9 28          | 1 59.37                       | + 7 4.8         | 2.019          | 2.954    | 8.4     | 19.7 | 9 28          | 2 1.89                        | +10 10.6        | 1.300          | 2.239    | 11.7    | 20.7 |
| 10 8          | 1 52.42                       | + 6 52.3        | 1.980          | 2.958    | 4.8     | 19.4 | 10 8          | 1 54.37                       | + 9 39.6        | 1.243          | 2.223    | 6.8     | 20.4 |
| 10 18         | 1 44.46                       | + 6 38.4        | 1.968          | 2.963    | 1.4     | 19.2 | 10 18         | 1 44.98                       | + 9 0.7         | 1.211          | 2.206    | 1.5     | 20.0 |
| 10 28         | 1 36.36                       | + 6 26.5        | 1.986          | 2.968    | 3.5     | 19.4 | 10 28         | 1 35.04                       | + 8 20.5        | 1.204          | 2.190    | 4.4     | 20.2 |
| 11 7          | 1 28.99                       | + 6 20.4        | 2.031          | 2.973    | 7.2     | 19.6 | 11 7          | 1 26.01                       | + 7 46.4        | 1.223          | 2.174    | 9.8     | 20.5 |
| 11 17         | 1 23.06                       | + 6 22.6        | 2.103          | 2.979    | 10.5    | 19.9 | 11 17         | 1 19.10                       | + 7 24.9        | 1.266          | 2.159    | 14.7    | 20.7 |
| 11 27         | 1 19.10                       | + 6 35.2        | 2.198          | 2.986    | 13.3    | 20.1 | 11 27         | 1 15.19                       | + 7 20.3        | 1.328          | 2.144    | 18.9    | 20.9 |
| <b>64319</b>  | 2001 <i>UV</i> <sub>37</sub>  |                 | 10 20.8 284°82 | 1°1/21.6 | 18      |      | <b>34871</b>  | 2001 <i>UM</i> <sub>2</sub>   |                 | 10 20.8 86°43  | 1°2/19.8 | 18      |      |
| 9 18          | 2 5.18                        | +16 29.8        | 1.566          | 2.426    | 15.3    | 19.9 | 9 18          | 2 6.43                        | +10 55.8        | 1.569          | 2.441    | 14.7    | 18.6 |
| 9 28          | 2 0.44                        | +15 53.0        | 1.487          | 2.414    | 11.5    | 19.7 | 9 28          | 2 0.99                        | + 9 59.1        | 1.517          | 2.454    | 10.6    | 18.4 |
| 10 8          | 1 53.35                       | +14 58.1        | 1.429          | 2.402    | 7.0     | 19.4 | 10 8          | 1 53.45                       | + 8 51.1        | 1.488          | 2.467    | 6.0     | 18.2 |
| 10 18         | 1 44.71                       | +13 48.4        | 1.397          | 2.391    | 2.2     | 19.1 | 10 18         | 1 44.71                       | + 7 37.9        | 1.484          | 2.479    | 1.5     | 17.9 |
| 10 28         | 1 35.67                       | +12 30.7        | 1.392          | 2.379    | 3.5     | 19.1 | 10 28         | 1 35.91                       | + 6 27.4        | 1.509          | 2.492    | 4.2     | 18.2 |
| 11 7          | 1 27.50                       | +11 13.8        | 1.414          | 2.368    | 8.4     | 19.4 | 11 7          | 1 28.18                       | + 5 27.0        | 1.561          | 2.505    | 8.7     | 18.5 |
| 11 17         | 1 21.26                       | +10 6.3         | 1.460          | 2.356    | 13.0    | 19.6 | 11 17         | 1 22.37                       | + 4 42.5        | 1.637          | 2.517    | 12.8    | 18.7 |
| 11 27         | 1 17.67                       | + 9 15.0        | 1.529          | 2.345    | 16.8    | 19.9 | 11 27         | 1 19.05                       | + 4 16.9        | 1.735          | 2.530    | 16.1    | 19.0 |
| <b>509556</b> | 2008 <i>BS</i> <sub>51</sub>  |                 | 10 20.8 275°17 | 0°3/20.9 | 17      |      | <b>72238</b>  | 2001 <i>AE</i> <sub>21</sub>  |                 | 10 20.8 267°71 |          |         |      |

EPHEMERIDES

10 20.8

10 20.8

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$       | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------------|----------|---------|------|---------------|-------------------------------|-----------------|----------------|-----------|---------|------|
| <b>214010</b> | 2004 <i>CR</i> <sub>54</sub>  |                 | 10 20.8 133°40 | 2°6/23.3 | 18      |      | <b>159110</b> | 2004 <i>VF</i> <sub>15</sub>  |                 | 10 20.8 18°67  | 12°5/14.1 | 18      |      |
| 9 18          | 2 7.27                        | +20 25.2        | 2.318          | 3.139    | 12.3    | 21.0 | 9 18          | 2 5.54                        | -13 32.5        | 1.022          | 1.921     | 18.4    | 18.5 |
| 9 28          | 2 1.19                        | +20 20.6        | 2.249          | 3.151    | 9.4     | 20.9 | 9 28          | 2 0.95                        | -14 43.8        | 1.000          | 1.932     | 15.2    | 18.4 |
| 10 8          | 1 53.45                       | +20 2.4         | 2.205          | 3.162    | 6.2     | 20.7 | 10 8          | 1 53.61                       | -15 33.3        | 0.995          | 1.944     | 13.0    | 18.3 |
| 10 18         | 1 44.72                       | +19 31.6        | 2.187          | 3.172    | 3.3     | 20.5 | 10 18         | 1 44.78                       | -15 50.4        | 1.011          | 1.958     | 12.7    | 18.3 |
| 10 28         | 1 35.86                       | +18 51.4        | 2.199          | 3.182    | 3.1     | 20.5 | 10 28         | 1 36.07                       | -15 28.8        | 1.048          | 1.973     | 14.5    | 18.5 |
| 11 7          | 1 27.75                       | +18 6.5         | 2.241          | 3.192    | 6.0     | 20.7 | 11 7          | 1 28.97                       | -14 29.5        | 1.105          | 1.990     | 17.3    | 18.7 |
| 11 17         | 1 21.09                       | +17 22.1        | 2.310          | 3.201    | 9.0     | 21.0 | 11 17         | 1 24.44                       | -12 58.3        | 1.180          | 2.009     | 20.2    | 19.0 |
| 11 27         | 1 16.41                       | +16 43.2        | 2.405          | 3.210    | 11.8    | 21.2 | 11 27         | 1 22.97                       | -11 2.8         | 1.271          | 2.029     | 22.7    | 19.2 |
| <b>417882</b> | 2007 <i>PS</i> <sub>48</sub>  |                 | 10 20.8 38°98  | 6°0/17.5 | 18      |      | <b>445663</b> | 2011 <i>UJ</i> <sub>79</sub>  |                 | 10 20.8 326°91 | 1°5/21.9  | 18      |      |
| 9 18          | 2 9.60                        | - 2 28.5        | 1.310          | 2.199    | 15.9    | 19.8 | 9 18          | 2 5.61                        | +16 4.6         | 1.789          | 2.642     | 14.0    | 21.2 |
| 9 28          | 2 3.42                        | - 2 58.0        | 1.275          | 2.216    | 11.7    | 19.6 | 9 28          | 2 0.48                        | +15 54.1        | 1.715          | 2.639     | 10.5    | 20.9 |
| 10 8          | 1 54.86                       | - 3 22.3        | 1.261          | 2.234    | 7.8     | 19.4 | 10 8          | 1 53.28                       | +15 29.9        | 1.664          | 2.635     | 6.5     | 20.7 |
| 10 18         | 1 45.02                       | - 3 35.0        | 1.272          | 2.252    | 6.0     | 19.4 | 10 18         | 1 44.75                       | +14 54.2        | 1.639          | 2.632     | 2.3     | 20.4 |
| 10 28         | 1 35.26                       | - 3 30.5        | 1.308          | 2.271    | 8.1     | 19.5 | 10 28         | 1 35.93                       | +14 11.3        | 1.642          | 2.629     | 3.1     | 20.5 |
| 11 7          | 1 26.88                       | - 3 6.4         | 1.369          | 2.291    | 11.7    | 19.8 | 11 7          | 1 27.93                       | +13 27.4        | 1.672          | 2.626     | 7.4     | 20.7 |
| 11 17         | 1 20.81                       | - 2 23.1        | 1.452          | 2.311    | 15.3    | 20.1 | 11 17         | 1 21.64                       | +12 48.3        | 1.728          | 2.623     | 11.3    | 21.0 |
| 11 27         | 1 17.55                       | - 1 22.8        | 1.555          | 2.332    | 18.4    | 20.3 | 11 27         | 1 17.73                       | +12 19.4        | 1.806          | 2.620     | 14.7    | 21.2 |
| <b>324239</b> | 2006 <i>BB</i> <sub>135</sub> |                 | 10 20.8 71°78  | 4°2/16.5 | 18      |      | <b>144335</b> | 2004 <i>DS</i> <sub>28</sub>  |                 | 10 20.8 334°70 | 2°1/22.3  | 18      |      |
| 9 18          | 2 3.25                        | - 0 27.5        | 2.154          | 3.031    | 11.0    | 20.6 | 9 18          | 2 6.44                        | +16 54.2        | 1.694          | 2.546     | 14.7    | 20.1 |
| 9 28          | 1 58.21                       | - 1 25.5        | 2.107          | 3.044    | 8.0     | 20.4 | 9 28          | 2 1.23                        | +16 58.3        | 1.619          | 2.541     | 11.1    | 19.9 |
| 10 8          | 1 51.69                       | - 2 22.6        | 2.085          | 3.056    | 5.3     | 20.3 | 10 8          | 1 53.78                       | +16 48.2        | 1.567          | 2.536     | 7.0     | 19.6 |
| 10 18         | 1 44.33                       | - 3 13.4        | 2.090          | 3.069    | 4.2     | 20.2 | 10 18         | 1 44.87                       | +16 25.1        | 1.540          | 2.531     | 3.0     | 19.4 |
| 10 28         | 1 36.94                       | - 3 52.8        | 2.124          | 3.081    | 6.0     | 20.3 | 10 28         | 1 35.61                       | +15 52.8        | 1.541          | 2.527     | 3.4     | 19.4 |
| 11 7          | 1 30.30                       | - 4 16.9        | 2.186          | 3.094    | 8.7     | 20.5 | 11 7          | 1 27.20                       | +15 17.0        | 1.569          | 2.524     | 7.6     | 19.6 |
| 11 17         | 1 25.02                       | - 4 24.1        | 2.272          | 3.106    | 11.5    | 20.7 | 11 17         | 1 20.63                       | +14 43.9        | 1.622          | 2.520     | 11.7    | 19.9 |
| 11 27         | 1 21.57                       | - 4 14.3        | 2.380          | 3.119    | 13.8    | 20.9 | 11 27         | 1 16.58                       | +14 19.4        | 1.697          | 2.517     | 15.3    | 20.1 |
| <b>522016</b> | 2015 <i>XW</i> <sub>309</sub> |                 | 10 20.8 268°35 | 0°3/20.5 | 18      |      | <b>150087</b> | 2006 <i>WC</i> <sub>175</sub> |                 | 10 20.8 272°75 | 0°2/20.6  | 18      |      |
| 9 18          | 2 4.07                        | +11 13.2        | 2.261          | 3.119    | 11.3    | 21.4 | 9 18          | 2 4.27                        | +12 23.5        | 2.000          | 2.860     | 12.5    | 20.7 |
| 9 28          | 1 58.96                       | +10 51.0        | 2.182          | 3.111    | 8.2     | 21.2 | 9 28          | 1 59.25                       | +11 50.8        | 1.927          | 2.857     | 9.1     | 20.5 |
| 10 8          | 1 52.23                       | +10 20.8        | 2.127          | 3.104    | 4.7     | 21.0 | 10 8          | 1 52.46                       | +11 7.8         | 1.879          | 2.855     | 5.3     | 20.3 |
| 10 18         | 1 44.48                       | + 9 45.4        | 2.101          | 3.096    | 1.0     | 20.7 | 10 18         | 1 44.57                       | +10 18.0        | 1.858          | 2.853     | 1.1     | 20.0 |
| 10 28         | 1 36.50                       | + 9 8.8         | 2.103          | 3.088    | 2.9     | 20.9 | 10 28         | 1 36.47                       | + 9 26.4        | 1.865          | 2.851     | 3.1     | 20.1 |
| 11 7          | 1 29.12                       | + 8 35.5        | 2.134          | 3.080    | 6.6     | 21.1 | 11 7          | 1 29.09                       | + 8 38.9        | 1.901          | 2.849     | 7.1     | 20.4 |
| 11 17         | 1 23.07                       | + 8 9.6         | 2.193          | 3.072    | 10.0    | 21.3 | 11 17         | 1 23.22                       | + 8 0.3         | 1.963          | 2.847     | 10.8    | 20.6 |
| 11 27         | 1 18.87                       | + 7 54.2        | 2.275          | 3.065    | 12.9    | 21.5 | 11 27         | 1 19.41                       | + 7 34.6        | 2.048          | 2.844     | 13.9    | 20.8 |
| <b>18193</b>  | Hollilydrury                  |                 | 10 20.8 252°87 | 1°2/21.8 | 18      |      | <b>50321</b>  | 2000 <i>CH</i> <sub>51</sub>  |                 | 10 20.8 107°72 | 0°9/21.6  | 18      | R    |
| 9 18          | 2 6.50                        | +16 33.0        | 1.831          | 2.679    | 14.0    | 19.3 | 9 18          | 2 5.40                        | +15 59.1        | 1.968          | 2.816     | 13.1    | 18.2 |
| 9 28          | 2 1.18                        | +16 3.1         | 1.744          | 2.666    | 10.5    | 19.1 | 9 28          | 2 0.01                        | +15 23.4        | 1.905          | 2.827     | 9.7     | 18.0 |
| 10 8          | 1 53.72                       | +15 17.5        | 1.681          | 2.652    | 6.4     | 18.8 | 10 8          | 1 52.85                       | +14 34.5        | 1.866          | 2.837     | 5.8     | 17.8 |
| 10 18         | 1 44.85                       | +14 18.9        | 1.644          | 2.637    | 2.1     | 18.5 | 10 18         | 1 44.64                       | +13 35.7        | 1.853          | 2.847     | 1.8     | 17.5 |
| 10 28         | 1 35.58                       | +13 12.5        | 1.635          | 2.622    | 3.2     | 18.6 | 10 28         | 1 36.33                       | +12 32.4        | 1.870          | 2.857     | 2.8     | 17.6 |
| 11 7          | 1 27.06                       | +12 5.5         | 1.654          | 2.607    | 7.6     | 18.8 | 11 7          | 1 28.86                       | +11 31.0        | 1.916          | 2.867     | 6.8     | 17.9 |
| 11 17         | 1 20.22                       | +11 5.1         | 1.700          | 2.591    | 11.7    | 19.0 | 11 17         | 1 22.98                       | +10 37.3        | 1.988          | 2.876     | 10.4    | 18.1 |
| 11 27         | 1 15.78                       | +10 17.5        | 1.769          | 2.575    | 15.3    | 19.2 | 11 27         | 1 19.23                       | + 9 55.8        | 2.084          | 2.885     | 13.5    | 18.4 |
| <b>221767</b> | 2007 <i>GT</i> <sub>32</sub>  |                 | 10 20.8 189°48 | 1°3/19.4 | 18      |      | <b>328856</b> | 2009 <i>WC</i> <sub>156</sub> |                 | 10 20.8 56°69  | 3°8/25.3  | 18      |      |
| 9 18          | 2 3.32                        | + 8 34.0        | 2.458          | 3.319    | 10.4    | 21.1 | 9 18          | 2 2.51                        | +26 20.1        | 2.258          | 3.061     | 13.2    | 20.3 |
| 9 28          | 1 58.23                       | + 7 54.3        | 2.386          | 3.319    | 7.5     | 20.9 | 9 28          | 1 57.87                       | +25 49.3        | 2.184          | 3.068     | 10.4    | 20.1 |
| 10 8          | 1 51.73                       | + 7 8.6         | 2.340          | 3.318    | 4.2     | 20.7 | 10 8          | 1 51.60                       | +24 59.3        | 2.132          | 3.075     | 7.4     | 19.9 |
| 10 18         | 1 44.37                       | + 6 20.4        | 2.322          | 3.317    | 1.4     | 20.5 | 10 18         | 1 44.38                       | +23 51.6        | 2.107          | 3.082     | 4.7     | 19.8 |
| 10 28         | 1 36.87                       | + 5 34.1        | 2.335          | 3.315    | 3.3     | 20.7 | 10 28         | 1 37.03                       | +22 30.4        | 2.110          | 3.089     | 3.9     | 19.7 |
| 11 7          | 1 29.95                       | + 4 54.1        | 2.376          | 3.314    | 6.6     | 20.9 | 11 7          | 1 30.42                       | +21 2.1         | 2.143          | 3.096     | 6.1     | 19.9 |
| 11 17         | 1 24.24                       | + 4 24.0        | 2.445          | 3.312    | 9.6     | 21.1 | 11 17         | 1 25.24                       | +19 33.8        | 2.203          | 3.103     | 9.0     | 20.1 |
| 11 27         | 1 20.22                       | + 4 6.1         | 2.537          | 3.310    | 12.2    | 21.3 | 11 27         | 1 22.00                       | +18 12.3        | 2.289          | 3.110     | 11.8    | 20.3 |
| <b>3012</b>   | Minsk                         |                 | 10 20.8 312°66 | 5°4/25.4 | 18      |      | <b>287424</b> | 2002 <i>WH</i> <sub>22</sub>  |                 | 10 20.8 274°58 | 3°8/17.6  | 18      |      |
| 9 18          | 2 8.57                        | +26 46.7        | 2.306          | 3.096    | 13.4    | 16.0 | 9 18          | 2 6.19                        | + 1 22.6        | 1.892          | 2.769     | 12.3    | 20.8 |
| 9 28          | 2 2.48                        | +27 31.8        | 2.220          | 3.090    | 10.9    | 15.9 | 9 28          | 2 0.68                        | + 0 43.3        | 1.827          | 2.765     | 9.0     | 20.6 |
| 10 8          | 1 54.41                       | +28 1.3         | 2.157          | 3.084    | 8.2     | 15.7 | 10 8          | 1 53.30                       | + 0 3.0         | 1.785          | 2.761     | 5.6     | 20.4 |
| 10 18         | 1 45.00                       | +28 13.4        | 2.119          | 3.079    | 6.0     | 15.5 | 10 18         | 1 44.76                       | - 0 33.0        | 1.771          | 2.756     | 3.8     | 20.3 |
| 10 28         | 1 35.17                       | +28 8.1         | 2.110          | 3.073    | 5.4     | 15.5 | 10 28         | 1 36.03                       | - 0 59.4        | 1.785          | 2.752     | 5.8     | 20.4 |
| 11 7          | 1 25.95                       | +27 48.7        | 2.129          | 3.068    | 7.1     | 15.6 | 11 7          | 1 28.07                       | - 1 11.9        | 1.826          | 2.748     | 9.3     | 20.6 |
| 11 17         | 1 18.23                       | +27 20.0        | 2.175          | 3.063    | 9.6     | 15.8 | 11 17         | 1 21.71                       | - 1 8.1         | 1.892          | 2.744     | 12.6    | 20.8 |
| 11 27         | 1 12.71                       | +26 48.3        | 2.245          | 3.058    | 12.2    | 15.9 | 11 27         | 1 17.52                       | - 0 47.4        | 1.979          | 2.740     | 15.5    | 21.0 |
| <b>275155</b> | 2009 <i>VA</i> <sub>104</sub> |                 | 10 20.8 310°61 | 0°4/20.3 | 18      |      | <b>324746</b> | 2007 <i>EH</i> <sub>224</sub> |                 | 10 20.8 250°15 | 0°3/20.5  | 18      |      |
| 9 18          | 2 0.49                        | +13 55.4        | 2.011          | 2.873    | 12.3    | 20.4 | 9 18          | 2 3.18                        | +12 5.6         | 2.279          | 3.135     | 11.3    | 21.8 |
| 9 28          | 1 56.64                       | +12 44.7        | 1.918          | 2.850    | 9.0     | 20.2 | 9 28          | 1 58.31                       | +11 29.8        | 2.201          | 3.129     | 8.2     | 21.6 |
| 10 8          | 1 51.03                       | +11 18.8        | 1.850          | 2.828    | 5.2     | 19.9 | 10 8          | 1 51.87                       | +10 44.8        | 2.147          | 3.123     | 4.7     | 21.3 |
| 10 18         | 1 44.25                       | + 9 42.5        | 1.810          | 2.805    | 1.1     | 19.6 | 10 18         | 1 44.45                       | + 9 53.7        | 2.122          | 3.117     | 1.0     | 21.1 |
| 10 28         | 1 37.16                       | + 8 2.8         | 1.798          | 2.783    | 3.4     | 19.7 | 10 28         | 1 36.83                       | + 9 1.3         | 2.126          | 3.111     | 2.9     | 21.2 |
| 11 7          | 1 30.65                       | + 6 27.9        | 1.815          | 2.761    | 7.6     | 19.9 | 11 7          | 1 29.82                       | + 8 12.7        | 2.158          | 3.104     | 6.6     | 21.4 |
| 11 17         | 1 25.53                       | + 5 5.1         | 1.859          | 2.740    | 11.4    | 20.1 | 11 17         | 1 24.10                       | + 7 32.3        | 2.218          | 3.098     | 9.9     | 21.6 |
| 11 27         | 1 22.41                       | + 3 59.9        | 1.926          | 2.718    | 14.7    | 20.3 | 11 27         | 1 20.20                       | + 7 3.7         | 2.302          | 3.091     | 12.8    | 21.8 |
| <b>390898</b> | 2005 <i>CW</i> <sub>28</sub>  |                 | 10 20.8 226°00 | 5°8/15.4 | 18      |      | <b>276443</b> | 2003 <i>EJ</i> <sub>22</sub>  |                 | 10 20.8 175°63 | 3°7/16.9  | 16      |      |

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| 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  | 2020          | $\alpha_{2000}$        | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  |
|---------------|------------------------|-----------------|----------------|----------|---------|------|---------------|------------------------|-----------------|----------------|----------|---------|------|
| <b>521843</b> | 2015 TX <sub>371</sub> |                 | 10 20.8 309°76 | 1°1/21.8 | 17      |      | <b>450485</b> | 2005 YK <sub>58</sub>  |                 | 10 20.8 344°58 | 5°9/26.2 | 18      |      |
| 9 18          | 2 4.19                 | +15 46.4        | 2.067          | 2.916    | 12.6    | 21.6 | 9 18          | 2 3.58                 | +28 19.2        | 1.817          | 2.623    | 15.8    | 20.8 |
| 9 28          | 1 59.22                | +15 29.1        | 1.990          | 2.912    | 9.4     | 21.4 | 9 28          | 1 59.22                | +28 30.3        | 1.737          | 2.617    | 12.9    | 20.5 |
| 10 8          | 1 52.47                | +14 59.7        | 1.937          | 2.908    | 5.7     | 21.2 | 10 8          | 1 52.68                | +28 18.7        | 1.677          | 2.611    | 9.8     | 20.3 |
| 10 18         | 1 44.60                | +14 20.4        | 1.911          | 2.904    | 1.9     | 21.0 | 10 18         | 1 44.69                | +27 43.5        | 1.641          | 2.605    | 6.9     | 20.2 |
| 10 28         | 1 36.50                | +13 35.4        | 1.913          | 2.900    | 2.8     | 21.0 | 10 28         | 1 36.35                | +26 47.0        | 1.630          | 2.601    | 6.0     | 20.1 |
| 11 7          | 1 29.08                | +12 50.1        | 1.944          | 2.897    | 6.6     | 21.3 | 11 7          | 1 28.82                | +25 35.5        | 1.647          | 2.597    | 7.8     | 20.2 |
| 11 17         | 1 23.13                | +12 9.7         | 2.002          | 2.893    | 10.2    | 21.5 | 11 17         | 1 23.08                | +24 17.3        | 1.688          | 2.593    | 10.9    | 20.4 |
| 11 27         | 1 19.23                | +11 38.7        | 2.083          | 2.890    | 13.3    | 21.7 | 11 27         | 1 19.82                | +23 1.5         | 1.753          | 2.590    | 14.1    | 20.6 |
| <b>300689</b> | 2007 VE <sub>47</sub>  |                 | 10 20.8 349°41 | 2°6/22.7 | 18      |      | <b>389798</b> | 2011 UE <sub>141</sub> |                 | 10 20.8 70°66  | 3°1/18.3 | 18      |      |
| 9 18          | 2 5.25                 | +18 24.4        | 1.560          | 2.414    | 15.7    | 20.4 | 9 18          | 2 6.48                 | +3 39.9         | 1.842          | 2.717    | 12.7    | 20.7 |
| 9 28          | 2 0.51                 | +18 21.2        | 1.489          | 2.410    | 11.9    | 20.2 | 9 28          | 2 0.89                 | +3 4.9          | 1.781          | 2.719    | 9.2     | 20.5 |
| 10 8          | 1 53.44                | +18 0.9         | 1.439          | 2.407    | 7.7     | 19.9 | 10 8          | 1 53.43                | +2 27.0         | 1.745          | 2.722    | 5.5     | 20.3 |
| 10 18         | 1 44.84                | +17 24.8        | 1.414          | 2.404    | 3.5     | 19.7 | 10 18         | 1 44.84                | +1 51.3         | 1.735          | 2.725    | 3.1     | 20.2 |
| 10 28         | 1 35.91                | +16 37.6        | 1.415          | 2.402    | 3.7     | 19.7 | 10 28         | 1 36.09                | +1 23.2         | 1.754          | 2.728    | 5.2     | 20.3 |
| 11 7          | 1 27.90                | +15 46.2        | 1.443          | 2.400    | 7.9     | 20.0 | 11 7          | 1 28.19                | +1 7.0          | 1.800          | 2.731    | 8.8     | 20.6 |
| 11 17         | 1 21.84                | +14 58.3        | 1.496          | 2.399    | 12.2    | 20.2 | 11 17         | 1 21.93                | +1 5.5          | 1.872          | 2.733    | 12.3    | 20.8 |
| 11 27         | 1 18.45                | +14 20.5        | 1.570          | 2.398    | 15.9    | 20.4 | 11 27         | 1 17.89                | +1 19.8         | 1.964          | 2.736    | 15.2    | 21.0 |
| <b>358179</b> | 2006 SZ <sub>77</sub>  |                 | 10 20.8 297°71 | 1°8/19.5 | 18      |      | <b>346423</b> | 2008 ST <sub>197</sub> |                 | 10 20.8 266°81 | 1°9/19.4 | 18      |      |
| 9 18          | 2 8.84                 | +5 44.5         | 1.850          | 2.718    | 12.9    | 21.0 | 9 18          | 2 7.36                 | +7 21.8         | 1.727          | 2.599    | 13.5    | 21.3 |
| 9 28          | 2 2.74                 | +5 40.6         | 1.775          | 2.710    | 9.4     | 20.7 | 9 28          | 2 1.81                 | +6 52.4         | 1.652          | 2.589    | 9.8     | 21.1 |
| 10 8          | 1 54.58                | +5 33.1         | 1.725          | 2.703    | 5.4     | 20.5 | 10 8          | 1 54.11                | +6 16.2         | 1.601          | 2.580    | 5.7     | 20.8 |
| 10 18         | 1 45.09                | +5 25.2         | 1.701          | 2.695    | 2.0     | 20.2 | 10 18         | 1 45.01                | +5 37.4         | 1.576          | 2.570    | 2.0     | 20.6 |
| 10 28         | 1 35.28                | +5 20.9         | 1.707          | 2.688    | 4.2     | 20.4 | 10 28         | 1 35.59                | +5 1.9          | 1.580          | 2.561    | 4.5     | 20.7 |
| 11 7          | 1 26.25                | +5 23.8         | 1.740          | 2.680    | 8.3     | 20.6 | 11 7          | 1 26.96                | +4 35.1         | 1.610          | 2.551    | 8.8     | 21.0 |
| 11 17         | 1 18.91                | +5 36.6         | 1.799          | 2.673    | 12.1    | 20.8 | 11 17         | 1 20.10                | +4 21.4         | 1.666          | 2.541    | 12.8    | 21.2 |
| 11 27         | 1 13.92                | +6 1.2          | 1.881          | 2.666    | 15.3    | 21.0 | 11 27         | 1 15.67                | +4 23.5         | 1.743          | 2.531    | 16.3    | 21.4 |
| <b>342588</b> | 2008 UQ <sub>288</sub> |                 | 10 20.8 302°89 | 1°1/19.9 | 18      |      | <b>70079</b>  | 1999 JE <sub>61</sub>  |                 | 10 20.8 100°61 | 5°3/17.2 | 18      |      |
| 9 18          | 2 4.21                 | +11 8.0         | 1.535          | 2.411    | 14.7    | 21.4 | 9 18          | 2 10.51                | +0 17.2         | 1.414          | 2.298    | 15.3    | 18.8 |
| 9 28          | 1 59.83                | +10 21.2        | 1.454          | 2.393    | 10.8    | 21.1 | 9 28          | 2 4.07                 | -0 43.0         | 1.371          | 2.312    | 11.2    | 18.6 |
| 10 8          | 1 53.10                | +9 20.8         | 1.395          | 2.374    | 6.2     | 20.8 | 10 8          | 1 55.31                | -1 42.7         | 1.351          | 2.326    | 7.2     | 18.4 |
| 10 18         | 1 44.79                | +8 11.7         | 1.361          | 2.356    | 1.5     | 20.4 | 10 18         | 1 45.24                | -2 34.0         | 1.357          | 2.339    | 5.3     | 18.3 |
| 10 28         | 1 36.01                | +7 1.6          | 1.354          | 2.338    | 4.4     | 20.6 | 10 28         | 1 35.18                | -3 9.2          | 1.389          | 2.353    | 7.7     | 18.5 |
| 11 7          | 1 28.03                | +5 59.1         | 1.373          | 2.320    | 9.4     | 20.8 | 11 7          | 1 26.39                | -3 23.6         | 1.446          | 2.366    | 11.5    | 18.8 |
| 11 17         | 1 21.92                | +5 11.3         | 1.416          | 2.303    | 13.9    | 21.1 | 11 17         | 1 19.80                | -3 15.6         | 1.527          | 2.379    | 15.1    | 19.0 |
| 11 27         | 1 18.43                | +4 43.1         | 1.480          | 2.286    | 17.8    | 21.3 | 11 27         | 1 15.96                | -2 46.5         | 1.627          | 2.391    | 18.2    | 19.3 |
| <b>306850</b> | 2001 SS <sub>119</sub> |                 | 10 20.8 64°23  | 1°3/19.5 | 16      |      | <b>96965</b>  | 1999 TC <sub>188</sub> |                 | 10 20.8 357°45 | 8°4/25.6 | 18      |      |
| 9 18          | 2 4.05                 | +11 44.9        | 1.722          | 2.591    | 13.7    | 20.8 | 9 18          | 2 9.78                 | +26 56.9        | 1.341          | 2.166    | 19.4    | 18.4 |
| 9 28          | 1 59.06                | +10 25.0        | 1.676          | 2.612    | 9.8     | 20.6 | 9 28          | 2 4.54                 | +28 19.1        | 1.273          | 2.162    | 16.0    | 18.2 |
| 10 8          | 1 52.29                | +8 54.1         | 1.655          | 2.634    | 5.5     | 20.4 | 10 8          | 1 56.16                | +29 18.7        | 1.224          | 2.160    | 12.4    | 17.9 |
| 10 18         | 1 44.54                | +7 19.0         | 1.661          | 2.656    | 1.5     | 20.2 | 10 18         | 1 45.54                | +29 50.3        | 1.196          | 2.158    | 9.3     | 17.8 |
| 10 28         | 1 36.82                | +5 48.0         | 1.695          | 2.677    | 4.0     | 20.5 | 10 28         | 1 34.24                | +29 52.5        | 1.192          | 2.157    | 8.5     | 17.7 |
| 11 7          | 1 30.09                | +4 28.8         | 1.758          | 2.699    | 8.1     | 20.8 | 11 7          | 1 24.03                | +29 30.0        | 1.213          | 2.158    | 10.6    | 17.9 |
| 11 17         | 1 25.07                | +3 27.0         | 1.846          | 2.721    | 11.8    | 21.0 | 11 17         | 1 16.38                | +28 51.7        | 1.256          | 2.159    | 14.0    | 18.1 |
| 11 27         | 1 22.23                | +2 45.3         | 1.956          | 2.743    | 14.8    | 21.3 | 11 27         | 1 12.25                | +28 8.7         | 1.319          | 2.162    | 17.5    | 18.3 |
| <b>523166</b> | 2016 TW <sub>98</sub>  |                 | 10 20.8 231°18 | 0°8/21.4 | 18      |      | <b>243774</b> | 2000 RY <sub>97</sub>  |                 | 10 20.8 29°08  | 7°1/28.2 | 18      |      |
| 9 18          | 2 10.01                | +13 7.1         | 1.988          | 2.836    | 13.0    | 21.5 | 9 18          | 2 3.40                 | +32 50.6        | 1.641          | 2.430    | 17.9    | 19.0 |
| 9 28          | 2 3.57                 | +13 14.0        | 1.906          | 2.829    | 9.7     | 21.3 | 9 28          | 1 59.14                | +32 40.1        | 1.578          | 2.441    | 14.9    | 18.9 |
| 10 8          | 1 55.07                | +13 11.6        | 1.849          | 2.821    | 5.8     | 21.0 | 10 8          | 1 52.60                | +31 59.8        | 1.533          | 2.453    | 11.5    | 18.7 |
| 10 18         | 1 45.21                | +13 1.4         | 1.819          | 2.814    | 1.7     | 20.8 | 10 18         | 1 44.67                | +30 49.7        | 1.511          | 2.465    | 8.5     | 18.5 |
| 10 28         | 1 35.00                | +12 46.4        | 1.819          | 2.805    | 3.0     | 20.8 | 10 28         | 1 36.62                | +29 13.9        | 1.514          | 2.479    | 7.1     | 18.5 |
| 11 7          | 1 25.51                | +12 30.8        | 1.847          | 2.797    | 7.2     | 21.1 | 11 7          | 1 29.66                | +27 21.7        | 1.544          | 2.492    | 8.4     | 18.6 |
| 11 17         | 1 17.66                | +12 18.8        | 1.903          | 2.788    | 11.0    | 21.3 | 11 17         | 1 24.74                | +25 24.3        | 1.599          | 2.507    | 11.2    | 18.8 |
| 11 27         | 1 12.12                | +12 14.6        | 1.982          | 2.779    | 14.2    | 21.5 | 11 27         | 1 22.44                | +23 33.0        | 1.678          | 2.521    | 14.3    | 19.0 |
| <b>195553</b> | 2002 JA <sub>68</sub>  |                 | 10 20.8 184°46 | 0°2/20.7 | 18      |      | <b>382740</b> | 2003 BF <sub>14</sub>  |                 | 10 20.8 313°12 | 5°1/17.1 | 18      |      |
| 9 18          | 2 10.78                | +10 23.5        | 1.951          | 2.806    | 13.0    | 20.7 | 9 18          | 2 4.34                 | +2 44.0         | 1.303          | 2.198    | 15.5    | 20.8 |
| 9 28          | 2 4.04                 | +10 24.6        | 1.879          | 2.806    | 9.5     | 20.4 | 9 28          | 2 0.21                 | +1 34.6         | 1.231          | 2.179    | 11.4    | 20.5 |
| 10 8          | 1 55.28                | +10 18.4        | 1.830          | 2.806    | 5.5     | 20.2 | 10 8          | 1 53.46                | +0 18.8         | 1.180          | 2.159    | 7.2     | 20.3 |
| 10 18         | 1 45.24                | +10 7.1         | 1.810          | 2.805    | 1.2     | 19.9 | 10 18         | 1 44.92                | -0 54.4         | 1.154          | 2.141    | 5.1     | 20.1 |
| 10 28         | 1 34.95                | +9 54.0         | 1.819          | 2.804    | 3.2     | 20.1 | 10 28         | 1 35.88                | -1 54.7         | 1.153          | 2.122    | 8.0     | 20.2 |
| 11 7          | 1 25.47                | +9 43.4         | 1.857          | 2.803    | 7.4     | 20.3 | 11 7          | 1 27.75                | -2 33.5         | 1.175          | 2.104    | 12.6    | 20.4 |
| 11 17         | 1 17.69                | +9 38.8         | 1.922          | 2.802    | 11.2    | 20.5 | 11 17         | 1 21.74                | -2 45.8         | 1.219          | 2.087    | 17.1    | 20.6 |
| 11 27         | 1 12.22                | +9 43.4         | 2.010          | 2.800    | 14.3    | 20.8 | 11 27         | 1 18.65                | -2 30.6         | 1.281          | 2.071    | 20.9    | 20.8 |
| <b>180967</b> | 2005 MJ <sub>37</sub>  |                 | 10 20.8 16°44  | 0°3/21.1 | 18      |      | <b>405755</b> | 2005 YC <sub>133</sub> |                 | 10 20.8 197°51 | 4°3/25.9 | 17      |      |
| 9 18          | 2 4.30                 | +13 43.0        | 1.747          | 2.610    | 13.8    | 20.7 | 9 18          | 2 5.48                 | +27 50.1        | 2.714          | 3.493    | 11.8    | 21.6 |
| 9 28          | 1 59.48                | +13 16.0        | 1.681          | 2.612    | 10.2    | 20.5 | 9 28          | 1 59.93                | +27 54.5        | 2.626          | 3.491    | 9.6     | 21.4 |
| 10 8          | 1 52.69                | +12 36.7        | 1.639          | 2.614    | 6.0     | 20.2 | 10 8          | 1 52.82                | +27 43.0        | 2.561          | 3.488    | 7.2     | 21.3 |
| 10 18         | 1 44.67                | +11 48.5        | 1.622          | 2.617    | 1.5     | 19.9 | 10 18         | 1 44.73                | +27 15.3        | 2.523          | 3.485    | 5.0     | 21.1 |
| 10 28         | 1 36.46                | +10 57.1        | 1.633          | 2.620    | 3.2     | 20.1 | 10 28         | 1 36.41                | +26 33.3        | 2.514          | 3.481    | 4.4     | 21.1 |
| 11 7          | 1 29.10                | +10 8.8         | 1.671          | 2.623    | 7.6     | 20.4 | 11 7          | 1 28.66                | +25 40.7        | 2.534          | 3.477    | 5.9     | 21.2 |
| 11 17         | 1 23.44                | +9 29.4         | 1.735          | 2.627    | 11.5    | 20.6 | 11 17         | 1 22.17                | +24 42.9        | 2.582          | 3.473    | 8.2     | 21.3 |
| 11 27         | 1 20.09                | +9 3.2          | 1.822          | 2.631    | 14.8    | 20.8 | 11 27         | 1 17.47                | +23 45.4        | 2.656          | 3.469    | 10.6    | 21.5 |
| <b>381026</b> | 2006 UQ <sub>233</sub> |                 | 10 20.8 346°20 | 3°2/19.3 | 18      |      | <b>23524</b>  | 1993 BF <sub>3</sub>   |                 | 10 20.8 284°61 | 2°7/22.8 | 18      |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$          | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$          | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------|--------------|---------|------|---------------|-------------------------------|-----------------|----------|--------------|---------|------|
| <b>291360</b> | 2006 <i>BV</i> <sub>261</sub> | 10 20.8 83°28'  |          | 1.6°/19.5 18 |         |      | <b>517886</b> | 2015 <i>ST</i> <sub>23</sub>  | 10 20.8 261°77' |          | 2.5°/18.8 18 |         |      |
| 9 18          | 2 7.05                        | + 8 40.3        | 1.644    | 2.516        | 14.1    | 20.4 | 9 18          | 2 6.66                        | + 4 16.0        | 2.074    | 2.943        | 11.7    | 21.4 |
| 9 28          | 2 1.45                        | + 8 0.0         | 1.589    | 2.527        | 10.1    | 20.2 | 9 28          | 2 0.98                        | + 3 52.4        | 2.000    | 2.936        | 8.5     | 21.2 |
| 10 8          | 1 53.80                       | + 7 11.6        | 1.558    | 2.537        | 5.7     | 19.9 | 10 8          | 1 53.53                       | + 3 25.9        | 1.951    | 2.928        | 5.0     | 21.0 |
| 10 18         | 1 44.94                       | + 6 20.2        | 1.553    | 2.547        | 1.8     | 19.7 | 10 18         | 1 44.95                       | + 3 0.4         | 1.930    | 2.921        | 2.5     | 20.8 |
| 10 28         | 1 35.99                       | + 5 32.4        | 1.576    | 2.557        | 4.4     | 19.9 | 10 28         | 1 36.13                       | + 2 40.3        | 1.937    | 2.913        | 4.5     | 21.0 |
| 11 7          | 1 28.04                       | + 4 54.2        | 1.626    | 2.568        | 8.6     | 20.2 | 11 7          | 1 28.00                       | + 2 29.5        | 1.973    | 2.905        | 8.1     | 21.2 |
| 11 17         | 1 21.95                       | + 4 30.0        | 1.701    | 2.578        | 12.5    | 20.5 | 11 17         | 1 21.32                       | + 2 30.7        | 2.035    | 2.898        | 11.4    | 21.4 |
| 11 27         | 1 18.27                       | + 4 22.3        | 1.797    | 2.588        | 15.7    | 20.7 | 11 27         | 1 16.70                       | + 2 45.5        | 2.119    | 2.890        | 14.3    | 21.5 |
| <b>308321</b> | 2005 <i>MG</i> <sub>38</sub>  | 10 20.8 86°98'  |          | 1.7°/19.2 18 |         |      | <b>335718</b> | 2007 <i>CD</i> <sub>20</sub>  | 10 20.8 157°01' |          | 4.5°/17.1 18 |         |      |
| 9 18          | 2 5.70                        | + 8 0.8         | 1.979    | 2.846        | 12.3    | 21.3 | 9 18          | 2 7.50                        | + 1 29.8        | 1.683    | 2.562        | 13.5    | 20.6 |
| 9 28          | 2 0.12                        | + 7 16.3        | 1.928    | 2.864        | 8.8     | 21.1 | 9 28          | 2 1.78                        | + 0 24.5        | 1.626    | 2.565        | 9.8     | 20.3 |
| 10 8          | 1 52.89                       | + 6 25.7        | 1.903    | 2.881        | 5.0     | 20.9 | 10 8          | 1 54.03                       | - 0 42.7        | 1.594    | 2.569        | 6.2     | 20.1 |
| 10 18         | 1 44.73                       | + 5 33.6        | 1.905    | 2.899        | 1.8     | 20.7 | 10 18         | 1 45.05                       | - 1 44.7        | 1.588    | 2.572        | 4.5     | 20.1 |
| 10 28         | 1 36.55                       | + 4 45.6        | 1.936    | 2.916        | 4.0     | 20.9 | 10 28         | 1 35.94                       | - 2 34.1        | 1.610    | 2.574        | 6.8     | 20.2 |
| 11 7          | 1 29.23                       | + 4 6.7         | 1.996    | 2.933        | 7.6     | 21.2 | 11 7          | 1 27.78                       | - 3 5.4         | 1.659    | 2.577        | 10.4    | 20.4 |
| 11 17         | 1 23.46                       | + 3 40.5        | 2.081    | 2.950        | 10.9    | 21.4 | 11 17         | 1 21.42                       | - 3 15.9        | 1.731    | 2.579        | 13.8    | 20.6 |
| 11 27         | 1 19.73                       | + 3 29.1        | 2.189    | 2.967        | 13.7    | 21.7 | 11 27         | 1 17.45                       | - 3 5.5         | 1.824    | 2.580        | 16.8    | 20.9 |
| <b>210106</b> | 2006 <i>QV</i> <sub>129</sub> | 10 20.8 261°01' |          | 3.5°/17.6 18 |         |      | <b>410921</b> | 2009 <i>SP</i> <sub>214</sub> | 10 20.8 351°03' |          | 0.2°/20.7 18 |         |      |
| 9 18          | 2 4.33                        | + 3 41.1        | 1.844    | 2.723        | 12.5    | 19.9 | 9 18          | 2 6.99                        | + 10 19.2       | 1.990    | 2.851        | 12.5    | 20.2 |
| 9 28          | 1 59.37                       | + 2 37.8        | 1.781    | 2.722        | 9.0     | 19.7 | 9 28          | 2 1.02                        | + 10 21.5       | 1.918    | 2.849        | 9.1     | 20.0 |
| 10 8          | 1 52.59                       | + 1 30.4        | 1.743    | 2.721        | 5.5     | 19.5 | 10 8          | 1 53.59                       | + 10 16.9       | 1.870    | 2.847        | 5.3     | 19.8 |
| 10 18         | 1 44.69                       | + 0 25.3        | 1.732    | 2.720        | 3.5     | 19.4 | 10 18         | 1 44.98                       | + 10 7.6        | 1.850    | 2.845        | 1.1     | 19.5 |
| 10 28         | 1 36.63                       | - 0 30.8        | 1.750    | 2.719        | 5.8     | 19.5 | 10 28         | 1 36.12                       | + 9 56.9        | 1.858    | 2.843        | 3.1     | 19.6 |
| 11 7          | 1 29.35                       | - 1 12.0        | 1.794    | 2.718        | 9.3     | 19.8 | 11 7          | 1 27.99                       | + 9 48.7        | 1.894    | 2.842        | 7.1     | 19.9 |
| 11 17         | 1 23.66                       | - 1 35.0        | 1.863    | 2.717        | 12.7    | 20.0 | 11 17         | 1 21.40                       | + 9 46.4        | 1.957    | 2.841        | 10.7    | 20.1 |
| 11 27         | 1 20.10                       | - 1 38.5        | 1.952    | 2.716        | 15.6    | 20.2 | 11 27         | 1 16.96                       | + 9 53.0        | 2.042    | 2.841        | 13.8    | 20.3 |
| <b>80484</b>  | 2000 <i>AN</i> <sub>36</sub>  | 10 20.8 211°62' |          | 0.9°/21.5 18 |         |      | <b>36060</b>  | Babuška                       | 10 20.8 151°30' |          | 0.3°/20.5 18 |         |      |
| 9 18          | 2 9.30                        | + 14 44.5       | 1.688    | 2.541        | 14.7    | 19.7 | 9 18          | 2 6.68                        | + 12 26.5       | 2.202    | 3.053        | 11.8    | 19.5 |
| 9 28          | 2 3.32                        | + 14 29.9       | 1.613    | 2.538        | 10.9    | 19.4 | 9 28          | 2 0.82                        | + 11 45.3       | 2.136    | 3.062        | 8.6     | 19.3 |
| 10 8          | 1 55.04                       | + 14 1.8        | 1.561    | 2.534        | 6.6     | 19.2 | 10 8          | 1 53.34                       | + 10 54.6       | 2.095    | 3.070        | 4.9     | 19.1 |
| 10 18         | 1 45.28                       | + 13 22.6       | 1.536    | 2.530        | 2.0     | 18.9 | 10 18         | 1 44.91                       | + 9 57.8        | 2.083    | 3.078        | 1.0     | 18.8 |
| 10 28         | 1 35.19                       | + 12 37.2       | 1.538    | 2.525        | 3.3     | 19.0 | 10 28         | 1 36.37                       | + 9 0.1         | 2.100    | 3.085        | 2.9     | 19.0 |
| 11 7          | 1 25.99                       | + 11 52.3       | 1.568    | 2.520        | 8.0     | 19.2 | 11 7          | 1 28.58                       | + 8 6.9         | 2.147    | 3.092        | 6.7     | 19.2 |
| 11 17         | 1 18.69                       | + 11 14.1       | 1.624    | 2.514        | 12.2    | 19.5 | 11 17         | 1 22.24                       | + 7 22.9        | 2.222    | 3.097        | 10.0    | 19.4 |
| 11 27         | 1 13.99                       | + 10 47.9       | 1.702    | 2.509        | 15.8    | 19.7 | 11 27         | 1 17.84                       | + 6 51.4        | 2.320    | 3.103        | 12.8    | 19.6 |
| <b>447721</b> | 2007 <i>ET</i> <sub>165</sub> | 10 20.8 184°84' |          | 1.4°/19.4 18 |         |      | <b>99002</b>  | 2001 <i>DN</i> <sub>50</sub>  | 10 20.8 136°20' |          | 4.9°/16.1 18 |         |      |
| 9 18          | 2 5.35                        | + 6 35.9        | 2.696    | 3.554        | 9.7     | 21.6 | 9 18          | 2 5.04                        | - 3 56.1        | 2.290    | 3.162        | 10.7    | 19.6 |
| 9 28          | 1 59.64                       | + 6 15.7        | 2.623    | 3.554        | 7.0     | 21.5 | 9 28          | 1 59.56                       | - 4 40.7        | 2.234    | 3.165        | 8.0     | 19.4 |
| 10 8          | 1 52.58                       | + 5 51.9        | 2.577    | 3.553        | 4.0     | 21.3 | 10 8          | 1 52.59                       | - 5 22.1        | 2.203    | 3.168        | 5.7     | 19.3 |
| 10 18         | 1 44.70                       | + 5 27.1        | 2.559    | 3.552        | 1.5     | 21.1 | 10 18         | 1 44.74                       | - 5 55.2        | 2.200    | 3.170        | 4.9     | 19.2 |
| 10 28         | 1 36.68                       | + 5 4.8         | 2.572    | 3.551        | 3.2     | 21.2 | 10 28         | 1 36.80                       | - 6 15.6        | 2.226    | 3.173        | 6.5     | 19.3 |
| 11 7          | 1 29.20                       | + 4 48.0        | 2.615    | 3.550        | 6.2     | 21.4 | 11 7          | 1 29.54                       | - 6 20.4        | 2.278    | 3.176        | 9.0     | 19.5 |
| 11 17         | 1 22.87                       | + 4 39.3        | 2.686    | 3.548        | 9.0     | 21.6 | 11 17         | 1 23.61                       | - 6 8.7         | 2.356    | 3.178        | 11.5    | 19.7 |
| 11 27         | 1 18.13                       | + 4 40.4        | 2.781    | 3.546        | 11.4    | 21.8 | 11 27         | 1 19.48                       | - 5 40.8        | 2.456    | 3.181        | 13.8    | 19.9 |
| <b>397394</b> | 2006 <i>VE</i> <sub>106</sub> | 10 20.8 351°51' |          | 9.8°/14.4 18 |         |      | <b>91667</b>  | 1999 <i>TU</i> <sub>111</sub> | 10 20.8 95°69'  |          | 0.9°/19.9 18 |         |      |
| 9 18          | 2 5.36                        | - 10 46.8       | 1.356    | 2.245        | 15.5    | 19.6 | 9 18          | 2 2.82                        | + 11 31.5       | 2.149    | 3.010        | 11.7    | 19.1 |
| 9 28          | 2 0.67                        | - 11 42.6       | 1.306    | 2.236        | 12.5    | 19.4 | 9 28          | 1 58.07                       | + 10 31.9       | 2.085    | 3.017        | 8.4     | 18.9 |
| 10 8          | 1 53.56                       | - 12 25.7       | 1.277    | 2.229        | 10.3    | 19.2 | 10 8          | 1 51.78                       | + 9 22.8        | 2.047    | 3.025        | 4.8     | 18.7 |
| 10 18         | 1 44.95                       | - 12 46.8       | 1.271    | 2.224        | 9.9     | 19.2 | 10 18         | 1 44.58                       | + 8 8.8         | 2.037    | 3.032        | 1.1     | 18.4 |
| 10 28         | 1 36.13                       | - 12 39.2       | 1.288    | 2.219        | 11.8    | 19.3 | 10 28         | 1 37.28                       | + 6 55.9        | 2.056    | 3.039        | 3.3     | 18.6 |
| 11 7          | 1 28.42                       | - 12 0.4        | 1.328    | 2.216        | 14.7    | 19.5 | 11 7          | 1 30.69                       | + 5 50.1        | 2.104    | 3.046        | 7.0     | 18.9 |
| 11 17         | 1 22.81                       | - 10 52.7       | 1.388    | 2.214        | 17.8    | 19.7 | 11 17         | 1 25.47                       | + 4 56.3        | 2.179    | 3.053        | 10.3    | 19.1 |
| 11 27         | 1 19.96                       | - 9 20.6        | 1.465    | 2.213        | 20.6    | 19.9 | 11 27         | 1 22.11                       | + 4 17.7        | 2.277    | 3.060        | 13.1    | 19.3 |
| <b>306829</b> | 2001 <i>RM</i> <sub>39</sub>  | 10 20.8 52°05'  |          | 5.3°/26.0 18 |         |      | <b>432841</b> | 2011 <i>HB</i> <sub>39</sub>  | 10 20.8 65°30'  |          | 8.4°/15.1 18 |         |      |
| 9 18          | 2 5.59                        | + 28 3.0        | 1.682    | 2.492        | 16.7    | 19.9 | 9 18          | 2 9.38                        | - 8 46.7        | 1.508    | 2.387        | 14.7    | 20.7 |
| 9 28          | 2 0.55                        | + 27 48.9       | 1.625    | 2.510        | 13.4    | 19.7 | 9 28          | 2 3.15                        | - 9 48.4        | 1.472    | 2.401        | 11.5    | 20.5 |
| 10 8          | 1 53.34                       | + 27 9.7        | 1.589    | 2.528        | 9.8     | 19.6 | 10 8          | 1 54.78                       | - 10 39.4       | 1.460    | 2.414        | 9.0     | 20.4 |
| 10 18         | 1 44.88                       | + 26 6.5        | 1.576    | 2.546        | 6.5     | 19.4 | 10 18         | 1 45.23                       | - 11 11.7       | 1.472    | 2.428        | 8.5     | 20.4 |
| 10 28         | 1 36.35                       | + 24 44.3       | 1.590    | 2.565        | 5.4     | 19.4 | 10 28         | 1 35.74                       | - 11 19.5       | 1.509    | 2.442        | 10.2    | 20.6 |
| 11 7          | 1 28.92                       | + 23 11.7       | 1.631    | 2.584        | 7.6     | 19.6 | 11 7          | 1 27.46                       | - 11 0.6        | 1.571    | 2.456        | 13.0    | 20.8 |
| 11 17         | 1 23.46                       | + 21 38.3       | 1.698    | 2.603        | 10.8    | 19.8 | 11 17         | 1 21.24                       | - 10 16.9       | 1.655    | 2.470        | 15.9    | 21.0 |
| 11 27         | 1 20.53                       | + 20 13.1       | 1.789    | 2.623        | 14.0    | 20.1 | 11 27         | 1 17.60                       | - 9 11.8        | 1.757    | 2.485        | 18.3    | 21.2 |
| <b>252854</b> | 2002 <i>GR</i> <sub>149</sub> | 10 20.8 166°37' |          | 0.5°/21.2 17 |         |      | <b>225294</b> | 1995 <i>QA</i> <sub>6</sub>   | 10 20.8 47°08'  |          | 1.3°/23.0 18 |         |      |
| 9 18          | 2 9.16                        | + 14 47.4       | 1.588    | 2.446        | 15.3    | 21.7 | 9 18          | 1 57.44                       | + 18 45.2       | 4.146    | 4.967        | 7.3     | 20.3 |
| 9 28          | 2 3.22                        | + 14 13.0       | 1.522    | 2.449        | 11.3    | 21.5 | 9 28          | 1 53.65                       | + 18 28.3       | 4.066    | 4.970        | 5.5     | 20.2 |
| 10 8          | 1 54.96                       | + 13 23.4       | 1.478    | 2.452        | 6.7     | 21.2 | 10 8          | 1 49.05                       | + 18 4.0        | 4.013    | 4.973        | 3.6     | 20.0 |
| 10 18         | 1 45.27                       | + 12 22.4       | 1.459    | 2.454        | 1.7     | 20.9 | 10 18         | 1 43.97                       | + 17 33.7       | 3.988    | 4.976        | 1.7     | 19.9 |
| 10 28         | 1 35.34                       | + 11 16.6       | 1.469    | 2.456        | 3.5     | 21.0 | 10 28         | 1 38.80                       | + 16 59.2       | 3.994    | 4.979        | 1.7     | 19.9 |
| 11 7          | 1 26.44                       | + 10 14.0       | 1.506    | 2.457        | 8.3     | 21.3 | 11 7          | 1 33.96                       | + 16 23.0       | 4.031    | 4.982        | 3.5     | 20.1 |
| 11 17         | 1 19.55                       | + 9 21.8        | 1.569    | 2.458        | 12.6    | 21.6 | 11 17         | 1 29.80                       | + 15 47.6       | 4.096    | 4.986        | 5.5     | 20.2 |
| 11 27         | 1 15.33                       | + 8 45.1        | 1.654    | 2.459        | 16.3    | 21.8 | 11 27         | 1 26.62                       | + 15 15.6       | 4.189    | 4.989        | 7.2     | 20.3 |
| <b>50122</b>  | 2000 <i>AO</i> <sub>123</sub> | 10 20.8 354°75' |          | 3.9°/18.3 18 |         |      | <b>488885</b> | 2005 <i>ST</i> <sub>233</sub> | 10 20.8 18°55'  |          | 0.1°         |         |      |

EPHEMERIDES

10 20.8

10 20.8

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$    | $\beta$   | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$    | $\beta$   | $V$  |
|---------------|-------------------------------|-----------------|----------|--------|-----------|------|---------------|-------------------------------|-----------------|----------|--------|-----------|------|
| <b>224166</b> | 2005 <i>QJ</i> <sub>97</sub>  |                 | 10 20.8  | 78°59  | 1.8°/22.0 | 18   | <b>321467</b> | 2009 <i>RP</i> <sub>45</sub>  |                 | 10 20.8  | 130°06 | 1.2°/22.0 | 18   |
| 9 18          | 2 11.88                       | +15 42.6        | 1.456    | 2.311  | 16.5      | 20.3 | 9 18          | 2 5.78                        | +15 42.1        | 2.416    | 3.255  | 11.3      | 20.9 |
| 9 28          | 2 5.26                        | +15 48.2        | 1.403    | 2.327  | 12.3      | 20.1 | 9 28          | 2 0.15                        | +15 36.5        | 2.345    | 3.261  | 8.4       | 20.7 |
| 10 8          | 1 56.16                       | +15 38.9        | 1.373    | 2.344  | 7.5       | 19.9 | 10 8          | 1 52.99                       | +15 20.9        | 2.299    | 3.267  | 5.2       | 20.5 |
| 10 18         | 1 45.58                       | +15 16.7        | 1.367    | 2.360  | 2.8       | 19.6 | 10 18         | 1 44.90                       | +14 57.2        | 2.280    | 3.272  | 1.9       | 20.3 |
| 10 28         | 1 34.90                       | +14 46.2        | 1.389    | 2.376  | 3.6       | 19.7 | 10 28         | 1 36.65                       | +14 28.2        | 2.291    | 3.278  | 2.5       | 20.3 |
| 11 7          | 1 25.48                       | +14 13.9        | 1.438    | 2.392  | 8.3       | 20.1 | 11 7          | 1 29.04                       | +13 58.0        | 2.332    | 3.283  | 5.8       | 20.6 |
| 11 17         | 1 18.34                       | +13 46.3        | 1.512    | 2.408  | 12.5      | 20.4 | 11 17         | 1 22.74                       | +13 30.7        | 2.401    | 3.288  | 8.9       | 20.8 |
| 11 27         | 1 14.10                       | +13 28.9        | 1.607    | 2.424  | 16.1      | 20.6 | 11 27         | 1 18.25                       | +13 10.0        | 2.494    | 3.293  | 11.6      | 21.0 |
| <b>221042</b> | 2005 <i>QF</i> <sub>77</sub>  |                 | 10 20.8  | 28°07  | 2.3°/22.6 | 18   | <b>326757</b> | 2003 <i>SG</i> <sub>68</sub>  |                 | 10 20.8  | 348°04 | 0°0°/20.8 | 18   |
| 9 18          | 2 4.76                        | +19 7.3         | 1.215    | 2.082  | 18.4      | 19.1 | 9 18          | 2 1.68                        | +13 58.4        | 2.012    | 2.872  | 12.4      | 20.7 |
| 9 28          | 2 0.52                        | +18 35.3        | 1.161    | 2.089  | 13.9      | 18.8 | 9 28          | 1 57.45                       | +13 8.7         | 1.939    | 2.869  | 9.1       | 20.5 |
| 10 8          | 1 53.60                       | +17 40.0        | 1.126    | 2.097  | 8.7       | 18.6 | 10 8          | 1 51.54                       | +12 6.7         | 1.891    | 2.867  | 5.3       | 20.3 |
| 10 18         | 1 45.03                       | +16 25.3        | 1.114    | 2.106  | 3.6       | 18.3 | 10 18         | 1 44.58                       | +10 56.4        | 1.869    | 2.864  | 1.2       | 20.0 |
| 10 28         | 1 36.28                       | +14 59.7        | 1.127    | 2.115  | 3.9       | 18.3 | 10 28         | 1 37.44                       | + 9 43.7        | 1.876    | 2.862  | 3.0       | 20.2 |
| 11 7          | 1 28.81                       | +13 34.6        | 1.166    | 2.125  | 9.0       | 18.7 | 11 7          | 1 30.99                       | + 8 35.3        | 1.912    | 2.861  | 7.0       | 20.4 |
| 11 17         | 1 23.71                       | +12 20.3        | 1.227    | 2.136  | 13.8      | 19.0 | 11 17         | 1 25.96                       | + 7 37.1        | 1.973    | 2.859  | 10.6      | 20.6 |
| 11 27         | 1 21.62                       | +11 24.4        | 1.309    | 2.148  | 17.9      | 19.3 | 11 27         | 1 22.90                       | + 6 53.2        | 2.058    | 2.858  | 13.7      | 20.8 |
| <b>244788</b> | 2003 <i>SN</i> <sub>204</sub> |                 | 10 20.8  | 341°83 | 2.3°/23.1 | 18   | <b>295239</b> | 2008 <i>GJ</i> <sub>21</sub>  |                 | 10 20.8  | 127°53 | 0°2°/20.7 | 16   |
| 9 18          | 1 58.32                       | +20 54.3        | 1.596    | 2.451  | 15.4      | 18.7 | 9 18          | 2 9.23                        | +12 42.8        | 1.720    | 2.578  | 14.3      | 21.7 |
| 9 28          | 1 55.55                       | +20 2.7         | 1.512    | 2.433  | 11.8      | 18.4 | 9 28          | 2 3.04                        | +12 6.0         | 1.661    | 2.590  | 10.4      | 21.5 |
| 10 8          | 1 50.67                       | +18 47.5        | 1.450    | 2.417  | 7.6       | 18.2 | 10 8          | 1 54.78                       | +11 17.4        | 1.626    | 2.602  | 6.0       | 21.3 |
| 10 18         | 1 44.40                       | +17 12.0        | 1.412    | 2.402  | 3.4       | 17.9 | 10 18         | 1 45.30                       | +10 21.2        | 1.618    | 2.613  | 1.3       | 21.0 |
| 10 28         | 1 37.78                       | +15 23.4        | 1.401    | 2.389  | 3.4       | 17.9 | 10 28         | 1 35.73                       | + 9 23.6        | 1.639    | 2.624  | 3.5       | 21.2 |
| 11 7          | 1 31.93                       | +13 32.1        | 1.416    | 2.376  | 7.7       | 18.1 | 11 7          | 1 27.17                       | + 8 31.5        | 1.687    | 2.634  | 7.9       | 21.5 |
| 11 17         | 1 27.80                       | +11 48.6        | 1.457    | 2.365  | 12.1      | 18.3 | 11 17         | 1 20.48                       | + 7 50.3        | 1.762    | 2.644  | 11.8      | 21.8 |
| 11 27         | 1 26.07                       | +10 21.7        | 1.521    | 2.355  | 16.0      | 18.5 | 11 27         | 1 16.24                       | + 7 24.0        | 1.858    | 2.654  | 15.1      | 22.0 |
| <b>158151</b> | 2001 <i>HK</i> <sub>11</sub>  |                 | 10 20.8  | 105°06 | 0°2°/20.6 | 18   | <b>40728</b>  | 1999 <i>SS</i> <sub>11</sub>  |                 | 10 20.8  | 27°71  | 3°6°/18.6 | 18   |
| 9 18          | 2 2.37                        | +12 55.7        | 2.364    | 3.218  | 11.0      | 19.5 | 9 18          | 2 5.80                        | + 4 34.0        | 1.187    | 2.084  | 16.6      | 17.4 |
| 9 28          | 1 57.67                       | +12 8.2         | 2.296    | 3.224  | 8.0       | 19.3 | 9 28          | 2 1.04                        | + 3 54.7        | 1.149    | 2.098  | 11.9      | 17.1 |
| 10 8          | 1 51.53                       | +11 11.2        | 2.254    | 3.230  | 4.6       | 19.1 | 10 8          | 1 53.77                       | + 3 11.3        | 1.132    | 2.113  | 7.0       | 16.9 |
| 10 18         | 1 44.55                       | +10 8.3         | 2.240    | 3.236  | 1.0       | 18.9 | 10 18         | 1 45.08                       | + 2 31.0        | 1.138    | 2.129  | 3.6       | 16.8 |
| 10 28         | 1 37.47                       | + 9 4.6         | 2.256    | 3.241  | 2.7       | 19.0 | 10 28         | 1 36.37                       | + 2 1.5         | 1.168    | 2.146  | 6.4       | 17.0 |
| 11 7          | 1 31.01                       | + 8 5.2         | 2.301    | 3.247  | 6.2       | 19.2 | 11 7          | 1 29.01                       | + 1 48.6        | 1.223    | 2.164  | 10.9      | 17.3 |
| 11 17         | 1 25.81                       | + 7 14.7        | 2.374    | 3.253  | 9.4       | 19.5 | 11 17         | 1 23.95                       | + 1 54.8        | 1.300    | 2.184  | 15.1      | 17.6 |
| 11 27         | 1 22.32                       | + 6 36.6        | 2.470    | 3.258  | 12.0      | 19.7 | 11 27         | 1 21.76                       | + 2 20.4        | 1.396    | 2.204  | 18.6      | 17.9 |
| <b>516592</b> | 2007 <i>GQ</i> <sub>66</sub>  |                 | 10 20.8  | 140°71 | 0°6°/21.6 | 18   | <b>389022</b> | 2008 <i>UC</i> <sub>239</sub> |                 | 10 20.8  | 349°78 | 6°4°/17.2 | 18 R |
| 9 18          | 2 2.86                        | +15 40.8        | 2.745    | 3.583  | 10.1      | 22.1 | 9 18          | 2 6.81                        | - 2 13.2        | 1.219    | 2.116  | 16.2      | 19.4 |
| 9 28          | 1 57.84                       | +15 0.2         | 2.675    | 3.592  | 7.5       | 22.0 | 9 28          | 2 2.03                        | - 2 47.8        | 1.163    | 2.109  | 12.2      | 19.2 |
| 10 8          | 1 51.56                       | +14 9.8         | 2.631    | 3.601  | 4.4       | 21.8 | 10 8          | 1 54.53                       | - 3 18.6        | 1.128    | 2.102  | 8.2       | 18.9 |
| 10 18         | 1 44.56                       | +13 12.3        | 2.615    | 3.609  | 1.3       | 21.6 | 10 18         | 1 45.30                       | - 3 37.8        | 1.115    | 2.097  | 6.4       | 18.8 |
| 10 28         | 1 37.47                       | +12 11.7        | 2.631    | 3.617  | 2.2       | 21.6 | 10 28         | 1 35.76                       | - 3 38.0        | 1.127    | 2.092  | 8.8       | 19.0 |
| 11 7          | 1 30.94                       | +11 12.6        | 2.676    | 3.625  | 5.3       | 21.9 | 11 7          | 1 27.38                       | - 3 15.2        | 1.162    | 2.089  | 12.9      | 19.2 |
| 11 17         | 1 25.54                       | +10 19.2        | 2.751    | 3.632  | 8.1       | 22.1 | 11 17         | 1 21.31                       | - 2 29.0        | 1.219    | 2.087  | 17.0      | 19.4 |
| 11 27         | 1 21.68                       | + 9 35.0        | 2.850    | 3.639  | 10.5      | 22.2 | 11 27         | 1 18.29                       | - 1 21.5        | 1.293    | 2.087  | 20.6      | 19.7 |
| <b>50861</b>  | 2000 <i>FO</i> <sub>69</sub>  |                 | 10 20.8  | 18°05  | 1°0°/21.7 | 18   | <b>219047</b> | 1995 <i>UO</i> <sub>57</sub>  |                 | 10 20.8  | 87°18  | 0°7°/20.3 | 16   |
| 9 18          | 2 4.03                        | +16 7.1         | 1.659    | 2.518  | 14.6      | 18.6 | 9 18          | 2 8.52                        | +12 59.0        | 1.455    | 2.323  | 15.8      | 21.6 |
| 9 28          | 1 59.45                       | +15 31.8        | 1.593    | 2.520  | 10.9      | 18.4 | 9 28          | 2 2.66                        | +11 56.8        | 1.409    | 2.343  | 11.4      | 21.4 |
| 10 8          | 1 52.79                       | +14 40.9        | 1.550    | 2.523  | 6.6       | 18.2 | 10 8          | 1 54.58                       | +10 40.7        | 1.385    | 2.363  | 6.5       | 21.2 |
| 10 18         | 1 44.86                       | +13 37.9        | 1.532    | 2.526  | 2.0       | 17.9 | 10 18         | 1 45.26                       | + 9 17.2        | 1.388    | 2.383  | 1.4       | 20.9 |
| 10 28         | 1 36.72                       | +12 29.3        | 1.542    | 2.529  | 3.2       | 18.0 | 10 28         | 1 35.97                       | + 7 55.1        | 1.418    | 2.403  | 4.0       | 21.1 |
| 11 7          | 1 29.49                       | +11 22.8        | 1.578    | 2.533  | 7.7       | 18.3 | 11 7          | 1 27.91                       | + 6 43.2        | 1.475    | 2.422  | 8.8       | 21.5 |
| 11 17         | 1 24.04                       | +10 25.4        | 1.641    | 2.537  | 11.8      | 18.5 | 11 17         | 1 21.98                       | + 5 48.0        | 1.556    | 2.441  | 13.0      | 21.8 |
| 11 27         | 1 20.98                       | + 9 42.5        | 1.725    | 2.541  | 15.2      | 18.8 | 11 27         | 1 18.68                       | + 5 12.9        | 1.659    | 2.459  | 16.4      | 22.0 |
| <b>436508</b> | 2011 <i>FW</i> <sub>27</sub>  |                 | 10 20.8  | 167°40 | 0°3°/21.1 | 17   | <b>329899</b> | 2005 <i>GV</i> <sub>162</sub> |                 | 10 20.8  | 203°80 | 4°1°/17.6 | 17   |
| 9 18          | 2 8.66                        | +13 37.4        | 1.848    | 2.701  | 13.7      | 21.9 | 9 18          | 2 9.70                        | + 1 59.2        | 1.760    | 2.633  | 13.3      | 21.7 |
| 9 28          | 2 2.62                        | +13 10.1        | 1.779    | 2.704  | 10.0      | 21.7 | 9 28          | 2 3.45                        | + 1 4.3         | 1.693    | 2.629  | 9.7       | 21.5 |
| 10 8          | 1 54.56                       | +12 30.9        | 1.734    | 2.708  | 5.9       | 21.4 | 10 8          | 1 55.09                       | + 0 6.8         | 1.650    | 2.624  | 6.1       | 21.3 |
| 10 18         | 1 45.25                       | +11 43.0        | 1.715    | 2.710  | 1.4       | 21.1 | 10 18         | 1 45.41                       | - 0 46.9        | 1.634    | 2.619  | 4.1       | 21.1 |
| 10 28         | 1 35.75                       | +10 51.7        | 1.726    | 2.712  | 3.2       | 21.3 | 10 28         | 1 35.49                       | - 1 30.1        | 1.647    | 2.613  | 6.3       | 21.3 |
| 11 7          | 1 27.11                       | +10 3.2         | 1.765    | 2.714  | 7.5       | 21.5 | 11 7          | 1 26.43                       | - 1 57.3        | 1.686    | 2.607  | 10.1      | 21.5 |
| 11 17         | 1 20.21                       | + 9 23.1        | 1.830    | 2.715  | 11.4      | 21.8 | 11 17         | 1 19.17                       | - 2 5.4         | 1.751    | 2.599  | 13.7      | 21.7 |
| 11 27         | 1 15.66                       | + 8 55.7        | 1.919    | 2.716  | 14.6      | 22.0 | 11 27         | 1 14.32                       | - 1 53.8        | 1.836    | 2.591  | 16.7      | 21.9 |
| <b>45631</b>  | 2000 <i>DY</i> <sub>105</sub> |                 | 10 20.8  | 333°76 | 8°3°/11.0 | 18   | <b>487717</b> | 2015 <i>RK</i> <sub>53</sub>  |                 | 10 20.8  | 357°29 | 2°5°/22.9 | 18   |
| 9 18          | 2 1.00                        | -11 12.7        | 2.021    | 2.898  | 11.6      | 18.2 | 9 18          | 2 6.06                        | +18 24.2        | 1.764    | 2.610  | 14.5      | 20.8 |
| 9 28          | 1 56.92                       | -13 2.1         | 1.972    | 2.892  | 9.6       | 18.1 | 9 28          | 2 0.95                        | +18 27.5        | 1.692    | 2.608  | 11.1      | 20.6 |
| 10 8          | 1 51.21                       | -14 43.3        | 1.949    | 2.886  | 8.4       | 18.0 | 10 8          | 1 53.71                       | +18 15.6        | 1.642    | 2.607  | 7.2       | 20.4 |
| 10 18         | 1 44.50                       | -16 7.8         | 1.951    | 2.880  | 8.7       | 18.0 | 10 18         | 1 45.11                       | +17 49.8        | 1.618    | 2.607  | 3.4       | 20.2 |
| 10 28         | 1 37.64                       | -17 8.7         | 1.979    | 2.875  | 10.3      | 18.1 | 10 28         | 1 36.21                       | +17 13.7        | 1.621    | 2.606  | 3.5       | 20.2 |
| 11 7          | 1 31.46                       | -17 42.1        | 2.031    | 2.870  | 12.5      | 18.3 | 11 7          | 1 28.15                       | +16 33.0        | 1.651    | 2.606  | 7.3       | 20.4 |
| 11 17         | 1 26.66                       | -17 47.6        | 2.104    | 2.865  | 14.8      | 18.4 | 11 17         | 1 21.85                       | +15 54.0        | 1.707    | 2.607  | 11.1      | 20.6 |
| 11 27         | 1 23.78                       | -17 26.9        | 2.194    | 2.861  | 16.7      | 18.6 | 11 27         | 1 17.97                       | +15 22.7        | 1.786    | 2.608  | 14.5      | 20.9 |
| <b>102142</b> | 1999 <i>RB</i> <sub>185</sub> |                 | 10 20.8  | 8°78   | 5°9°/17.3 | 18   | <b>370551</b> | 2003 <i>UP</i> <sub></sub>    |                 |          |        |           |      |



EPHEMERIDES

10 20.8

10 20.9

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$             | $\Delta$ | $r$   | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$             | $\Delta$ | $r$   | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------------------|----------|-------|---------|------|---------------|-------------------------------|-----------------------------|----------|-------|---------|------|
| <b>249905</b> | 2001 <i>SK</i> <sub>91</sub>  | 10 20.8 359°15 2°0/22.5 18  |          |       |         |      | <b>134957</b> | 2001 <i>DN</i> <sub>18</sub>  | 10 20.9 282°16 1°0/19.2 18  |          |       |         |      |
| 9 18          | 2 4.79                        | +17 50.0                    | 1.729    | 2.580 | 14.6    | 20.6 | 9 18          | 1 57.90                       | + 6 11.1                    | 4.375    | 5.232 | 6.3     | 19.3 |
| 9 28          | 2 0.02                        | +17 34.6                    | 1.658    | 2.579 | 11.0    | 20.3 | 9 28          | 1 53.95                       | + 5 54.2                    | 4.298    | 5.229 | 4.5     | 19.2 |
| 10 8          | 1 53.16                       | +17 3.4                     | 1.610    | 2.578 | 6.9     | 20.1 | 10 8          | 1 49.25                       | + 5 35.4                    | 4.249    | 5.225 | 2.6     | 19.0 |
| 10 18         | 1 44.99                       | +16 18.5                    | 1.587    | 2.578 | 2.9     | 19.9 | 10 18         | 1 44.10                       | + 5 16.2                    | 4.229    | 5.222 | 1.0     | 18.9 |
| 10 28         | 1 36.55                       | +15 24.8                    | 1.591    | 2.578 | 3.2     | 19.9 | 10 28         | 1 38.87                       | + 4 58.7                    | 4.240    | 5.218 | 2.1     | 19.0 |
| 11 7          | 1 28.96                       | +14 29.0                    | 1.623    | 2.578 | 7.3     | 20.1 | 11 7          | 1 33.91                       | + 4 44.7                    | 4.281    | 5.214 | 4.0     | 19.1 |
| 11 17         | 1 23.12                       | +13 38.1                    | 1.680    | 2.579 | 11.3    | 20.4 | 11 17         | 1 29.57                       | + 4 35.6                    | 4.351    | 5.211 | 5.9     | 19.2 |
| 11 27         | 1 19.68                       | +12 57.8                    | 1.760    | 2.580 | 14.8    | 20.6 | 11 27         | 1 26.12                       | + 4 32.9                    | 4.447    | 5.207 | 7.5     | 19.4 |
| <b>128023</b> | 2003 <i>KE</i>                | 10 20.8 279°53 13°9/ 9.3 18 |          |       |         |      | <b>477114</b> | 2009 <i>BR</i> <sub>183</sub> | 10 20.9 334°61 13°3/10.5 18 |          |       |         |      |
| 9 18          | 2 15.02                       | -25 59.5                    | 1.727    | 2.548 | 15.9    | 19.8 | 9 18          | 2 8.03                        | -20 29.5                    | 1.471    | 2.332 | 16.1    | 19.9 |
| 9 28          | 2 7.61                        | -27 11.8                    | 1.669    | 2.525 | 14.5    | 19.6 | 9 28          | 2 2.58                        | -21 51.3                    | 1.428    | 2.322 | 14.3    | 19.8 |
| 10 8          | 1 57.62                       | -28 0.7                     | 1.631    | 2.502 | 13.9    | 19.6 | 10 8          | 1 54.70                       | -22 51.6                    | 1.406    | 2.313 | 13.3    | 19.7 |
| 10 18         | 1 46.00                       | -28 16.3                    | 1.616    | 2.478 | 14.3    | 19.5 | 10 18         | 1 45.36                       | -23 20.1                    | 1.405    | 2.305 | 13.7    | 19.7 |
| 10 28         | 1 34.06                       | -27 51.9                    | 1.623    | 2.454 | 15.7    | 19.6 | 10 28         | 1 35.85                       | -23 10.2                    | 1.426    | 2.298 | 15.2    | 19.8 |
| 11 7          | 1 23.20                       | -26 46.8                    | 1.651    | 2.430 | 17.6    | 19.6 | 11 7          | 1 27.49                       | -22 21.1                    | 1.468    | 2.291 | 17.3    | 19.9 |
| 11 17         | 1 14.53                       | -25 5.2                     | 1.698    | 2.405 | 19.7    | 19.7 | 11 17         | 1 21.28                       | -20 56.8                    | 1.527    | 2.284 | 19.6    | 20.1 |
| 11 27         | 1 8.74                        | -22 54.0                    | 1.760    | 2.381 | 21.6    | 19.9 | 11 27         | 1 17.84                       | -19 3.8                     | 1.603    | 2.279 | 21.7    | 20.3 |
| <b>513583</b> | 2010 <i>YW</i> <sub>2</sub>   | 10 20.8 141°44 3°1/23.9 18  |          |       |         |      | <b>239936</b> | 2000 <i>YQ</i> <sub>58</sub>  | 10 20.9 215°28 4°0/24.7 18  |          |       |         |      |
| 9 18          | 2 5.92                        | +21 44.2                    | 2.427    | 3.242 | 12.0    | 21.1 | 9 18          | 2 7.57                        | +24 44.0                    | 2.124    | 2.930 | 13.8    | 20.9 |
| 9 28          | 2 0.36                        | +21 51.1                    | 2.349    | 3.245 | 9.3     | 20.9 | 9 28          | 2 1.88                        | +24 38.4                    | 2.037    | 2.924 | 11.0    | 20.7 |
| 10 8          | 1 53.18                       | +21 44.5                    | 2.296    | 3.247 | 6.4     | 20.8 | 10 8          | 1 54.23                       | +24 14.4                    | 1.973    | 2.918 | 7.8     | 20.5 |
| 10 18         | 1 44.98                       | +21 24.9                    | 2.270    | 3.250 | 3.7     | 20.6 | 10 18         | 1 45.29                       | +23 32.2                    | 1.935    | 2.911 | 4.9     | 20.3 |
| 10 28         | 1 36.57                       | +20 54.6                    | 2.272    | 3.253 | 3.4     | 20.6 | 10 28         | 1 36.04                       | +22 34.7                    | 1.925    | 2.903 | 4.2     | 20.2 |
| 11 7          | 1 28.79                       | +20 17.6                    | 2.304    | 3.255 | 5.8     | 20.7 | 11 7          | 1 27.50                       | +21 27.5                    | 1.944    | 2.896 | 6.7     | 20.4 |
| 11 17         | 1 22.35                       | +19 38.9                    | 2.364    | 3.257 | 8.7     | 20.9 | 11 17         | 1 20.54                       | +20 17.8                    | 1.991    | 2.887 | 10.0    | 20.5 |
| 11 27         | 1 17.80                       | +19 3.3                     | 2.448    | 3.260 | 11.4    | 21.1 | 11 27         | 1 15.82                       | +19 12.7                    | 2.062    | 2.879 | 13.1    | 20.7 |
| <b>15000</b>  | CCD                           | 10 20.8 159°77 2°4/23.4 18  |          |       |         |      | <b>155880</b> | 2001 <i>ED</i> <sub>7</sub>   | 10 20.9 185°16 3°7/16.8 18  |          |       |         |      |
| 9 18          | 2 5.48                        | +21 1.8                     | 2.214    | 3.038 | 12.7    | 19.2 | 9 18          | 2 2.50                        | + 1 29.4                    | 2.286    | 3.161 | 10.5    | 19.9 |
| 9 28          | 2 0.11                        | +20 35.4                    | 2.139    | 3.042 | 9.8     | 19.0 | 9 28          | 1 57.83                       | + 0 24.4                    | 2.223    | 3.161 | 7.7     | 19.7 |
| 10 8          | 1 53.04                       | +19 53.2                    | 2.087    | 3.045 | 6.4     | 18.8 | 10 8          | 1 51.70                       | + 0 42.3                    | 2.187    | 3.161 | 4.9     | 19.5 |
| 10 18         | 1 44.94                       | +18 57.3                    | 2.062    | 3.049 | 3.2     | 18.6 | 10 18         | 1 44.70                       | + 1 45.2                    | 2.179    | 3.160 | 3.7     | 19.4 |
| 10 28         | 1 36.68                       | +17 51.7                    | 2.067    | 3.052 | 3.0     | 18.6 | 10 28         | 1 37.56                       | + 2 38.8                    | 2.199    | 3.160 | 5.5     | 19.6 |
| 11 7          | 1 29.14                       | +16 42.4                    | 2.101    | 3.055 | 6.1     | 18.8 | 11 7          | 1 31.05                       | + 3 18.5                    | 2.248    | 3.160 | 8.3     | 19.7 |
| 11 17         | 1 23.06                       | +15 35.7                    | 2.163    | 3.057 | 9.4     | 19.0 | 11 17         | 1 25.80                       | + 3 41.8                    | 2.322    | 3.160 | 11.1    | 19.9 |
| 11 27         | 1 18.98                       | +14 37.4                    | 2.249    | 3.059 | 12.3    | 19.2 | 11 27         | 1 22.27                       | + 3 47.6                    | 2.417    | 3.159 | 13.5    | 20.1 |
| <b>141683</b> | 2002 <i>JG</i> <sub>125</sub> | 10 20.8 76°66 1°8/21.9 18   |          |       |         |      | <b>402782</b> | 2007 <i>CH</i> <sub>37</sub>  | 10 20.9 76°56 4°6/25.3 18   |          |       |         |      |
| 9 18          | 2 12.15                       | +15 22.2                    | 1.341    | 2.202 | 17.4    | 19.6 | 9 18          | 2 7.46                        | +25 44.6                    | 2.106    | 2.908 | 14.0    | 21.0 |
| 9 28          | 2 5.71                        | +15 29.3                    | 1.287    | 2.214 | 12.9    | 19.3 | 9 28          | 2 1.70                        | +25 59.6                    | 2.039    | 2.921 | 11.2    | 20.9 |
| 10 8          | 1 56.56                       | +15 21.0                    | 1.254    | 2.226 | 7.9     | 19.1 | 10 8          | 1 54.04                       | +25 56.7                    | 1.995    | 2.933 | 8.1     | 20.7 |
| 10 18         | 1 45.75                       | +14 59.1                    | 1.245    | 2.238 | 2.8     | 18.8 | 10 18         | 1 45.23                       | +25 35.6                    | 1.976    | 2.946 | 5.4     | 20.6 |
| 10 28         | 1 34.76                       | +14 28.5                    | 1.263    | 2.250 | 3.8     | 18.9 | 10 28         | 1 36.25                       | +24 58.8                    | 1.985    | 2.958 | 4.8     | 20.6 |
| 11 7          | 1 25.09                       | +13 56.3                    | 1.307    | 2.262 | 8.8     | 19.3 | 11 7          | 1 28.08                       | +24 11.2                    | 2.023    | 2.971 | 6.7     | 20.7 |
| 11 17         | 1 17.85                       | +13 29.4                    | 1.375    | 2.274 | 13.4    | 19.6 | 11 17         | 1 21.55                       | +23 19.1                    | 2.087    | 2.983 | 9.6     | 20.9 |
| 11 27         | 1 13.72                       | +13 13.6                    | 1.464    | 2.286 | 17.2    | 19.8 | 11 27         | 1 17.24                       | +22 29.2                    | 2.176    | 2.996 | 12.3    | 21.1 |
| <b>330863</b> | 2009 <i>QT</i> <sub>41</sub>  | 10 20.8 42°96 3°5/18.6 18   |          |       |         |      | <b>377555</b> | 2005 <i>JE</i> <sub>76</sub>  | 10 20.9 51°22 0°7/21.4 15   |          |       |         |      |
| 9 18          | 2 7.19                        | + 5 51.1                    | 1.168    | 2.061 | 17.0    | 20.3 | 9 18          | 2 8.93                        | +15 0.7                     | 1.159    | 2.034 | 18.5    | 21.1 |
| 9 28          | 2 2.09                        | + 4 56.1                    | 1.128    | 2.076 | 12.2    | 20.1 | 9 28          | 2 3.38                        | +14 29.0                    | 1.121    | 2.057 | 13.5    | 20.9 |
| 10 8          | 1 54.41                       | + 3 54.7                    | 1.110    | 2.091 | 7.1     | 19.8 | 10 8          | 1 55.16                       | +13 39.7                    | 1.104    | 2.080 | 8.0     | 20.7 |
| 10 18         | 1 45.25                       | + 2 55.1                    | 1.115    | 2.107 | 3.5     | 19.7 | 10 18         | 1 45.47                       | +12 38.1                    | 1.110    | 2.104 | 2.1     | 20.4 |
| 10 28         | 1 36.08                       | + 2 6.4                     | 1.145    | 2.123 | 6.4     | 19.9 | 10 28         | 1 35.85                       | +11 33.1                    | 1.141    | 2.129 | 3.9     | 20.6 |
| 11 7          | 1 28.31                       | + 1 35.7                    | 1.199    | 2.140 | 11.2    | 20.2 | 11 7          | 1 27.77                       | +10 34.2                    | 1.197    | 2.153 | 9.3     | 21.0 |
| 11 17         | 1 22.94                       | + 1 26.6                    | 1.275    | 2.157 | 15.5    | 20.5 | 11 17         | 1 22.22                       | + 9 49.0                    | 1.277    | 2.178 | 14.0    | 21.3 |
| 11 27         | 1 20.53                       | + 1 39.5                    | 1.371    | 2.175 | 19.1    | 20.8 | 11 27         | 1 19.73                       | + 9 22.1                    | 1.376    | 2.203 | 17.8    | 21.6 |
| <b>294483</b> | 2007 <i>WS</i> <sub>6</sub>   | 10 20.9 0°36 2°7/22.3 17    |          |       |         |      | <b>474112</b> | 2016 <i>LC</i> <sub>30</sub>  | 10 20.9 97°95 4°8/17.5 17   |          |       |         |      |
| 9 18          | 2 5.76                        | +16 8.0                     | 0.963    | 1.851 | 20.3    | 19.9 | 9 18          | 2 10.30                       | + 2 8.1                     | 1.377    | 2.261 | 15.6    | 21.1 |
| 9 28          | 2 1.97                        | +16 25.7                    | 0.908    | 1.848 | 15.4    | 19.6 | 9 28          | 2 4.07                        | + 1 2.3                     | 1.335    | 2.276 | 11.3    | 20.9 |
| 10 8          | 1 54.83                       | +16 23.3                    | 0.870    | 1.846 | 9.7     | 19.3 | 10 8          | 1 55.47                       | + 0 5.3                     | 1.315    | 2.291 | 7.0     | 20.7 |
| 10 18         | 1 45.43                       | +16 2.0                     | 0.853    | 1.845 | 3.9     | 18.9 | 10 18         | 1 45.54                       | + 1 6.4                     | 1.320    | 2.305 | 4.8     | 20.6 |
| 10 28         | 1 35.54                       | +15 27.6                    | 0.858    | 1.846 | 4.6     | 19.0 | 10 28         | 1 35.61                       | + 1 52.7                    | 1.352    | 2.319 | 7.3     | 20.8 |
| 11 7          | 1 27.08                       | +14 49.4                    | 0.885    | 1.849 | 10.5    | 19.3 | 11 7          | 1 26.97                       | + 2 18.6                    | 1.409    | 2.333 | 11.3    | 21.1 |
| 11 17         | 1 21.49                       | +14 17.3                    | 0.934    | 1.852 | 16.0    | 19.7 | 11 17         | 1 20.54                       | + 2 21.7                    | 1.489    | 2.347 | 15.1    | 21.4 |
| 11 27         | 1 19.61                       | +13 58.9                    | 1.000    | 1.857 | 20.6    | 20.0 | 11 27         | 1 16.90                       | + 2 2.8                     | 1.589    | 2.360 | 18.3    | 21.6 |
| <b>185993</b> | 2001 <i>OB</i> <sub>76</sub>  | 10 20.9 73°34 4°9/25.2 18   |          |       |         |      | <b>485772</b> | 2012 <i>CJ</i> <sub>38</sub>  | 10 20.9 155°22 2°8/17.7 18  |          |       |         |      |
| 9 18          | 2 10.18                       | +26 19.8                    | 1.474    | 2.294 | 18.2    | 19.8 | 9 18          | 2 4.15                        | + 2 19.3                    | 2.606    | 3.472 | 9.7     | 21.8 |
| 9 28          | 2 4.00                        | +25 59.3                    | 1.427    | 2.321 | 14.3    | 19.6 | 9 28          | 1 58.83                       | + 1 36.3                    | 2.544    | 3.478 | 7.0     | 21.7 |
| 10 8          | 1 55.39                       | +25 12.5                    | 1.401    | 2.348 | 10.0    | 19.4 | 10 8          | 1 52.20                       | + 0 52.1                    | 2.509    | 3.483 | 4.3     | 21.5 |
| 10 18         | 1 45.46                       | +24 1.2                     | 1.398    | 2.375 | 6.1     | 19.3 | 10 18         | 1 44.81                       | + 0 10.4                    | 2.502    | 3.488 | 2.8     | 21.4 |
| 10 28         | 1 35.61                       | +22 32.1                    | 1.422    | 2.402 | 5.1     | 19.3 | 10 28         | 1 37.32                       | + 0 24.5                    | 2.526    | 3.492 | 4.4     | 21.5 |
| 11 7          | 1 27.14                       | +20 55.3                    | 1.473    | 2.428 | 8.0     | 19.5 | 11 7          | 1 30.42                       | + 0 49.2                    | 2.578    | 3.497 | 7.1     | 21.7 |
| 11 17         | 1 21.00                       | +19 21.6                    | 1.550    | 2.454 | 11.8    | 19.8 | 11 17         | 1 24.67                       | + 1 1.6                     | 2.657    | 3.500 | 9.7     | 21.9 |
| 11 27         | 1 17.70                       | +17 59.9                    | 1.649    | 2.480 | 15.1    | 20.1 | 11 27         | 1 20.50                       | + 1 0.6                     | 2.759    | 3.504 | 12.0    | 22.0 |
| <b>229765</b> | 2008 <i>FT</i> <sub>95</sub>  | 10 20.9 31°34 2°4/19.4 18   |          |       |         |      | <b>520451</b> | 2014 <i>KW</i> <sub>106</sub> | 10 20.9 97°56 2°3/18.9 18   |          |       |         |      |
| 9 18          | 2 6.39                        | + 8 6.3                     | 1.050    | 1.948 | 18.2    | 19.5 | 9 18          | 2 6.16                        | + 5 57.3                    | 1.943    | 2.814 | 12.3    | 21.6 |
| 9 28          | 2 1.74                        | + 7 27.2                    | 1.012    | 1.962 | 13.1    | 19.3 | 9 28          | 2 0.66                        | + 5 20.2                    | 1.884    |       |         |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$         | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$          | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------|-------------|---------|------|---------------|-------------------------------|-----------------|----------|--------------|---------|------|
| <b>151365</b> | 2002 <i>DR</i> <sub>6</sub>   | 10 20.9 242°49  |          | 0°5/20.3 18 |         |      | <b>381716</b> | 2009 <i>QA</i> <sub>38</sub>  | 10 20.9 24°92   |          | 5°2/17.6 18  |         |      |
| 9 18          | 2 4.10                        | +11 16.1        | 2.228    | 3.086       | 11.4    | 20.7 | 9 18          | 2 3.71                        | +3 48.3         | 0.993    | 1.902        | 18.0    | 19.6 |
| 9 28          | 1 59.11                       | +10 40.6        | 2.150    | 3.080       | 8.3     | 20.5 | 9 28          | 1 59.90                       | +2 33.1         | 0.959    | 1.913        | 12.9    | 19.4 |
| 10 8          | 1 52.51                       | +9 56.5         | 2.098    | 3.074       | 4.8     | 20.3 | 10 8          | 1 53.29                       | +1 13.6         | 0.944    | 1.926        | 7.9     | 19.2 |
| 10 18         | 1 44.90                       | +9 6.9          | 2.073    | 3.068       | 1.1     | 20.0 | 10 18         | 1 45.09                       | +0 0.8          | 0.951    | 1.940        | 5.2     | 19.1 |
| 10 28         | 1 37.07                       | +8 16.7         | 2.077    | 3.062       | 3.0     | 20.1 | 10 28         | 1 36.87                       | -0 54.1         | 0.982    | 1.956        | 8.2     | 19.3 |
| 11 7          | 1 29.86                       | +7 30.9         | 2.110    | 3.055       | 6.8     | 20.4 | 11 7          | 1 30.13                       | -1 23.7         | 1.034    | 1.972        | 12.9    | 19.6 |
| 11 17         | 1 23.97                       | +6 54.0         | 2.171    | 3.049       | 10.1    | 20.6 | 11 17         | 1 25.89                       | -1 25.4         | 1.107    | 1.990        | 17.2    | 19.9 |
| 11 27         | 1 19.96                       | +6 29.3         | 2.254    | 3.042       | 13.0    | 20.7 | 11 27         | 1 24.72                       | -1 0.4          | 1.197    | 2.009        | 20.8    | 20.2 |
| <b>451152</b> | 2009 <i>SC</i> <sub>23</sub>  | 10 20.9 102°17  |          | 0°3/20.6 18 |         |      | <b>20045</b>  | 1993 <i>FV</i> <sub>11</sub>  | 10 20.9 322°94  |          | 2°8/18.9 18  |         |      |
| 9 18          | 2 3.56                        | +12 58.3        | 2.219    | 3.074       | 11.6    | 21.8 | 9 18          | 2 4.87                        | +6 21.0         | 1.420    | 2.307        | 15.0    | 17.5 |
| 9 28          | 1 58.60                       | +12 7.4         | 2.157    | 3.084       | 8.4     | 21.6 | 9 28          | 2 0.52                        | +5 41.8         | 1.346    | 2.291        | 10.9    | 17.2 |
| 10 8          | 1 52.14                       | +11 6.6         | 2.119    | 3.095       | 4.8     | 21.4 | 10 8          | 1 53.72                       | +4 54.8         | 1.295    | 2.275        | 6.4     | 16.9 |
| 10 18         | 1 44.80                       | +9 59.8         | 2.110    | 3.106       | 1.0     | 21.1 | 10 18         | 1 45.25                       | +4 5.9          | 1.268    | 2.261        | 2.8     | 16.7 |
| 10 28         | 1 37.37                       | +8 52.5         | 2.131    | 3.116       | 2.9     | 21.3 | 10 28         | 1 36.34                       | +3 22.6         | 1.267    | 2.246        | 5.6     | 16.8 |
| 11 7          | 1 30.66                       | +7 50.4         | 2.180    | 3.126       | 6.5     | 21.6 | 11 7          | 1 28.29                       | +2 52.2         | 1.291    | 2.233        | 10.4    | 17.1 |
| 11 17         | 1 25.30                       | +6 58.1         | 2.257    | 3.136       | 9.8     | 21.8 | 11 17         | 1 22.22                       | +2 39.7         | 1.337    | 2.220        | 14.9    | 17.3 |
| 11 27         | 1 21.76                       | +6 19.3         | 2.358    | 3.146       | 12.5    | 22.0 | 11 27         | 1 18.90                       | +2 47.6         | 1.404    | 2.208        | 18.7    | 17.5 |
| <b>227060</b> | 2005 <i>EB</i> <sub>202</sub> | 10 20.9 297°20  |          | 6°5/15.9 17 |         |      | <b>511206</b> | 2013 <i>YB</i> <sub>152</sub> | 10 20.9 155°32  |          | 6°9/26.8 18  |         |      |
| 9 18          | 2 11.26                       | -9 45.7         | 2.228    | 3.084       | 11.5    | 20.4 | 9 18          | 2 10.41                       | +30 20.0        | 1.863    | 2.646        | 16.3    | 21.4 |
| 9 28          | 2 4.36                        | -10 3.5         | 2.145    | 3.060       | 9.1     | 20.2 | 9 28          | 2 4.31                        | +30 50.3        | 1.787    | 2.648        | 13.5    | 21.3 |
| 10 8          | 1 55.60                       | -10 12.8        | 2.088    | 3.037       | 7.1     | 20.0 | 10 8          | 1 55.80                       | +30 57.8        | 1.732    | 2.651        | 10.5    | 21.1 |
| 10 18         | 1 45.61                       | -10 8.6         | 2.058    | 3.013       | 6.5     | 20.0 | 10 18         | 1 45.72                       | +30 40.0        | 1.700    | 2.653        | 7.8     | 20.9 |
| 10 28         | 1 35.30                       | -9 47.0         | 2.057    | 2.990       | 7.9     | 20.0 | 10 28         | 1 35.27                       | +29 58.3        | 1.695    | 2.656        | 6.9     | 20.9 |
| 11 7          | 1 25.62                       | -9 6.2          | 2.084    | 2.966       | 10.4    | 20.1 | 11 7          | 1 25.73                       | +28 58.1        | 1.717    | 2.658        | 8.4     | 21.0 |
| 11 17         | 1 17.41                       | -8 6.6          | 2.136    | 2.943       | 13.1    | 20.3 | 11 17         | 1 18.17                       | +27 47.7        | 1.765    | 2.659        | 11.2    | 21.1 |
| 11 27         | 1 11.29                       | -6 50.3         | 2.210    | 2.919       | 15.5    | 20.4 | 11 27         | 1 13.33                       | +26 36.4        | 1.836    | 2.661        | 14.1    | 21.3 |
| <b>42178</b>  | 2001 <i>CO</i> <sub>25</sub>  | 10 20.9 42°25   |          | 3°6/23.3 18 |         |      | <b>70636</b>  | 1999 <i>TH</i> <sub>230</sub> | 10 20.9 36°12   |          | 3°7/18.4 18  |         |      |
| 9 18          | 2 9.93                        | +19 19.9        | 1.403    | 2.253       | 17.3    | 18.2 | 9 18          | 2 7.06                        | +3 45.4         | 1.410    | 2.297        | 15.1    | 18.8 |
| 9 28          | 2 4.04                        | +19 44.1        | 1.352    | 2.269       | 13.3    | 18.0 | 9 28          | 2 1.78                        | +3 5.6          | 1.363    | 2.307        | 10.9    | 18.6 |
| 10 8          | 1 55.59                       | +19 49.9        | 1.322    | 2.286       | 8.7     | 17.8 | 10 8          | 1 54.22                       | +2 22.6         | 1.338    | 2.317        | 6.5     | 18.4 |
| 10 18         | 1 45.61                       | +19 37.8        | 1.316    | 2.303       | 4.6     | 17.6 | 10 18         | 1 45.33                       | +1 42.9         | 1.337    | 2.327        | 3.7     | 18.2 |
| 10 28         | 1 35.47                       | +19 11.5        | 1.336    | 2.321       | 4.4     | 17.6 | 10 28         | 1 36.35                       | +1 13.3         | 1.363    | 2.339        | 6.1     | 18.4 |
| 11 7          | 1 26.60                       | +18 37.8        | 1.383    | 2.339       | 8.3     | 17.9 | 11 7          | 1 28.51                       | +0 59.0         | 1.415    | 2.350        | 10.3    | 18.7 |
| 11 17         | 1 20.04                       | +18 4.1         | 1.453    | 2.358       | 12.4    | 18.2 | 11 17         | 1 22.73                       | +1 2.9          | 1.490    | 2.363        | 14.2    | 18.9 |
| 11 27         | 1 16.42                       | +17 37.3        | 1.546    | 2.377       | 15.9    | 18.5 | 11 27         | 1 19.60                       | +1 25.2         | 1.584    | 2.375        | 17.5    | 19.2 |
| <b>273775</b> | 2007 <i>EE</i> <sub>196</sub> | 10 20.9 104°62  |          | 0°7/20.3 18 |         |      | <b>72354</b>  | 2001 <i>BR</i> <sub>74</sub>  | 10 20.9 202°83  |          | 0°0/20.9 18  |         |      |
| 9 18          | 2 6.56                        | +12 7.5         | 1.624    | 2.491       | 14.5    | 21.0 | 9 18          | 2 7.19                        | +12 31.0        | 1.852    | 2.710        | 13.4    | 20.2 |
| 9 28          | 2 1.28                        | +11 19.5        | 1.562    | 2.496       | 10.5    | 20.7 | 9 28          | 2 1.65                        | +12 7.6         | 1.780    | 2.709        | 9.8     | 20.0 |
| 10 8          | 1 53.90                       | +10 19.0        | 1.524    | 2.502       | 6.0     | 20.5 | 10 8          | 1 54.11                       | +11 33.4        | 1.732    | 2.707        | 5.7     | 19.7 |
| 10 18         | 1 45.22                       | +9 11.2         | 1.512    | 2.507       | 1.3     | 20.2 | 10 18         | 1 45.33                       | +10 51.7        | 1.711    | 2.706        | 1.3     | 19.4 |
| 10 28         | 1 36.38                       | +8 3.2          | 1.527    | 2.512       | 3.8     | 20.4 | 10 28         | 1 36.29                       | +10 7.5         | 1.718    | 2.704        | 3.2     | 19.6 |
| 11 7          | 1 28.51                       | +7 2.7          | 1.570    | 2.517       | 8.4     | 20.7 | 11 7          | 1 28.05                       | +9 26.5         | 1.753    | 2.702        | 7.5     | 19.8 |
| 11 17         | 1 22.51                       | +6 15.7         | 1.638    | 2.523       | 12.5    | 20.9 | 11 17         | 1 21.49                       | +8 54.1         | 1.815    | 2.700        | 11.4    | 20.1 |
| 11 27         | 1 18.96                       | +5 46.2         | 1.728    | 2.528       | 15.9    | 21.2 | 11 27         | 1 17.22                       | +8 34.1         | 1.899    | 2.698        | 14.7    | 20.3 |
| <b>114108</b> | 2002 <i>VR</i> <sub>44</sub>  | 10 20.9 32°51   |          | 3°9/17.9 18 |         |      | <b>267678</b> | 2002 <i>UL</i> <sub>2</sub>   | 10 20.9 349°81  |          | 21°3/24.7 16 |         |      |
| 9 18          | 2 5.60                        | +2 52.7         | 1.567    | 2.451       | 14.0    | 18.7 | 9 18          | 2 24.38                       | +34 15.6        | 0.811    | 1.632        | 29.2    | 19.4 |
| 9 28          | 2 0.56                        | +2 5.4          | 1.516    | 2.459       | 10.1    | 18.5 | 9 28          | 2 18.73                       | +38 47.2        | 0.758    | 1.624        | 26.3    | 19.1 |
| 10 8          | 1 53.45                       | +1 15.7         | 1.489    | 2.467       | 6.1     | 18.3 | 10 8          | 2 6.69                        | +42 55.1        | 0.720    | 1.617        | 23.6    | 18.9 |
| 10 18         | 1 45.12                       | +0 30.1         | 1.487    | 2.475       | 3.9     | 18.2 | 10 18         | 1 48.67                       | +46 12.9        | 0.699    | 1.612        | 21.7    | 18.8 |
| 10 28         | 1 36.69                       | -0 4.8          | 1.512    | 2.484       | 6.1     | 18.4 | 10 28         | 1 27.34                       | +48 17.5        | 0.696    | 1.608        | 21.4    | 18.8 |
| 11 7          | 1 29.26                       | -0 24.0         | 1.563    | 2.493       | 10.0    | 18.6 | 11 7          | 1 7.18                        | +49 4.2         | 0.709    | 1.606        | 22.7    | 18.9 |
| 11 17         | 1 23.68                       | -0 24.8         | 1.638    | 2.503       | 13.6    | 18.8 | 11 17         | 0 52.40                       | +48 47.8        | 0.737    | 1.606        | 25.0    | 19.0 |
| 11 27         | 1 20.51                       | -0 6.9          | 1.733    | 2.513       | 16.7    | 19.1 | 11 27         | 0 45.38                       | +47 54.3        | 0.777    | 1.607        | 27.6    | 19.2 |
| <b>23803</b>  | 1998 <i>QE</i> <sub>39</sub>  | 10 20.9 9°72    |          | 0°1/20.9 18 |         |      | <b>519973</b> | 2013 <i>TY</i> <sub>166</sub> | 10 20.9 334°62  |          | 2°2/19.2 18  |         |      |
| 9 18          | 2 3.08                        | +12 30.1        | 1.601    | 2.474       | 14.4    | 17.8 | 9 18          | 2 3.85                        | +10 6.8         | 1.236    | 2.126        | 16.6    | 21.5 |
| 9 28          | 1 58.83                       | +12 9.5         | 1.541    | 2.476       | 10.5    | 17.6 | 9 28          | 1 59.96                       | +8 57.5         | 1.173    | 2.119        | 12.0    | 21.2 |
| 10 8          | 1 52.51                       | +11 37.4        | 1.503    | 2.480       | 6.1     | 17.3 | 10 8          | 1 53.44                       | +7 32.9         | 1.130    | 2.112        | 6.9     | 20.9 |
| 10 18         | 1 44.93                       | +10 57.6        | 1.490    | 2.485       | 1.4     | 17.0 | 10 18         | 1 45.21                       | +6 1.1          | 1.111    | 2.105        | 2.3     | 20.6 |
| 10 28         | 1 37.14                       | +10 15.5        | 1.503    | 2.490       | 3.4     | 17.2 | 10 28         | 1 36.62                       | +4 32.9         | 1.117    | 2.100        | 5.6     | 20.8 |
| 11 7          | 1 30.25                       | +9 37.6         | 1.544    | 2.497       | 7.9     | 17.5 | 11 7          | 1 29.11                       | +3 19.2         | 1.148    | 2.095        | 10.9    | 21.1 |
| 11 17         | 1 25.14                       | +9 9.3          | 1.609    | 2.504       | 12.0    | 17.8 | 11 17         | 1 23.81                       | +2 28.0         | 1.202    | 2.090        | 15.7    | 21.4 |
| 11 27         | 1 22.41                       | +8 54.4         | 1.695    | 2.513       | 15.4    | 18.0 | 11 27         | 1 21.46                       | +2 2.9          | 1.274    | 2.086        | 19.8    | 21.6 |
| <b>319203</b> | 2005 <i>YC</i> <sub>191</sub> | 10 20.9 211°51  |          | 1°5/22.5 17 |         |      | <b>235750</b> | 2004 <i>TU</i> <sub>353</sub> | 10 20.9 250°76  |          | 2°2/19.1 18  |         |      |
| 9 18          | 2 4.60                        | +17 30.3        | 2.516    | 3.349       | 11.1    | 21.4 | 9 18          | 2 7.92                        | +6 14.6         | 1.967    | 2.833        | 12.4    | 21.0 |
| 9 28          | 1 59.37                       | +17 16.5        | 2.434    | 3.345       | 8.4     | 21.2 | 9 28          | 2 2.17                        | +5 39.4         | 1.883    | 2.818        | 9.0     | 20.7 |
| 10 8          | 1 52.63                       | +16 51.5        | 2.376    | 3.341       | 5.3     | 21.0 | 10 8          | 1 54.45                       | +4 58.4         | 1.824    | 2.802        | 5.3     | 20.5 |
| 10 18         | 1 44.95                       | +16 17.0        | 2.347    | 3.337       | 2.2     | 20.8 | 10 18         | 1 45.43                       | +4 15.8         | 1.793    | 2.785        | 2.3     | 20.2 |
| 10 28         | 1 37.05                       | +15 36.1        | 2.347    | 3.333       | 2.5     | 20.8 | 10 28         | 1 36.03                       | +3 37.2         | 1.790    | 2.768        | 4.5     | 20.4 |
| 11 7          | 1 29.72                       | +14 53.0        | 2.376    | 3.328       | 5.6     | 21.0 | 11 7          | 1 27.30                       | +3 7.6          | 1.816    | 2.751        | 8.4     | 20.6 |
| 11 17         | 1 23.61                       | +14 12.2        | 2.434    | 3.324       | 8.7     | 21.2 | 11 17         | 1 20.10                       | +2 51.1         | 1.868    | 2.733        | 12.1    | 20.8 |
| 11 27         | 1 19.25                       | +13 38.1        | 2.517    | 3.319       | 11.4    | 21.4 | 11 27         | 1 15.11                       | +2 50.2         | 1.942    | 2.715        | 15.3    | 21.0 |
| <b>23246</b>  | Terazono                      | 10 20.9 349°81  |          | 7°2/15.9 18 |         |      | <b>367041</b> | 2006 <i>DW</i> <sub>195</sub> | 10 20.9 197°51  |          | 3°9/16.0 18  |         |      |
| 9 18          | 2 2.67                        | -2 0.0          | 1.199    | 2.103       | 15.9    | 17.4 | 9 18          | 2 3.13                        | -2 23.8         | 2.8      |              |         |      |

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| 2020          | $\alpha_{2000}$              | $\delta_{2000}$ | $\Delta$        | $r$       | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$        | $r$       | $\beta$ | $V$  |
|---------------|------------------------------|-----------------|-----------------|-----------|---------|------|---------------|-------------------------------|-----------------|-----------------|-----------|---------|------|
| <b>231078</b> | 2005 <i>QS</i> <sub>51</sub> |                 | 10 20.9 110°38' | 3°6'/23.8 | 18      |      | <b>247040</b> | 2000 <i>EQ</i> <sub>116</sub> |                 | 10 20.9 323°30' | 5°6'/14.4 | 18      |      |
| 9 18          | 2 11.25                      | +21 48.5        | 1.688           | 2.515     | 15.9    | 20.7 | 9 18          | 2 1.18                        | -3 5.8          | 2.121           | 3.002     | 11.0    | 19.7 |
| 9 28          | 2 4.71                       | +21 46.2        | 1.628           | 2.531     | 12.3    | 20.5 | 9 28          | 1 57.04                       | -4 41.3         | 2.061           | 2.997     | 8.3     | 19.5 |
| 10 8          | 1 55.89                      | +21 24.7        | 1.591           | 2.547     | 8.2     | 20.3 | 10 8          | 1 51.35                       | -6 15.7         | 2.028           | 2.992     | 6.1     | 19.4 |
| 10 18         | 1 45.72                      | +20 45.0        | 1.579           | 2.563     | 4.5     | 20.1 | 10 18         | 1 44.72                       | -7 41.8         | 2.022           | 2.987     | 5.8     | 19.4 |
| 10 28         | 1 35.43                      | +19 51.4        | 1.595           | 2.577     | 4.1     | 20.1 | 10 28         | 1 37.93                       | -8 52.5         | 2.044           | 2.982     | 7.6     | 19.5 |
| 11 7          | 1 26.25                      | +18 51.2        | 1.638           | 2.592     | 7.5     | 20.4 | 11 7          | 1 31.76                       | -9 42.7         | 2.092           | 2.978     | 10.2    | 19.6 |
| 11 17         | 1 19.12                      | +17 52.2        | 1.708           | 2.606     | 11.3    | 20.6 | 11 17         | 1 26.90                       | -10 10.1        | 2.164           | 2.973     | 12.9    | 19.8 |
| 11 27         | 1 14.66                      | +17 1.5         | 1.801           | 2.620     | 14.6    | 20.9 | 11 27         | 1 23.85                       | -10 14.8        | 2.256           | 2.969     | 15.1    | 20.0 |
| <b>478832</b> | 2012 <i>VT</i> <sub>38</sub> |                 | 10 20.9 292°99' | 3°5'/18.7 | 18      |      | <b>80924</b>  | 2000 <i>DJ</i> <sub>73</sub>  |                 | 10 20.9 2°79'   | 4°8'/17.3 | 18      |      |
| 9 18          | 2 10.93                      | +2 5.6          | 1.658           | 2.532     | 13.9    | 20.9 | 9 18          | 2 2.58                        | +4 55.4         | 1.149           | 2.051     | 16.6    | 18.2 |
| 9 28          | 2 4.79                       | +1 53.0         | 1.572           | 2.509     | 10.3    | 20.6 | 9 28          | 1 59.03                       | +3 27.0         | 1.098           | 2.050     | 12.0    | 18.0 |
| 10 8          | 1 56.18                      | +1 39.6         | 1.509           | 2.486     | 6.3     | 20.4 | 10 8          | 1 52.87                       | +1 50.3         | 1.068           | 2.049     | 7.3     | 17.7 |
| 10 18         | 1 45.86                      | +1 29.8         | 1.473           | 2.462     | 3.6     | 20.1 | 10 18         | 1 45.09                       | +0 16.0         | 1.061           | 2.050     | 4.8     | 17.6 |
| 10 28         | 1 34.95                      | +1 28.7         | 1.464           | 2.439     | 5.8     | 20.2 | 10 28         | 1 37.08                       | -1 3.6          | 1.079           | 2.051     | 7.8     | 17.8 |
| 11 7          | 1 24.77                      | +1 40.5         | 1.483           | 2.416     | 10.1    | 20.4 | 11 7          | 1 30.24                       | -1 59.1         | 1.120           | 2.054     | 12.5    | 18.1 |
| 11 17         | 1 16.43                      | +2 7.5          | 1.526           | 2.392     | 14.3    | 20.6 | 11 17         | 1 25.66                       | -2 25.7         | 1.181           | 2.057     | 16.9    | 18.3 |
| 11 27         | 1 10.76                      | +2 50.7         | 1.590           | 2.369     | 17.9    | 20.8 | 11 27         | 1 23.99                       | -2 22.9         | 1.261           | 2.062     | 20.6    | 18.6 |
| <b>411019</b> | 2009 <i>UG</i> <sub>99</sub> |                 | 10 20.9 37°75'  | 0°7'/21.6 | 18      |      | <b>257458</b> | 1981 <i>EV</i> <sub>36</sub>  |                 | 10 20.9 148°31' | 3°6'/24.8 | 18      |      |
| 9 18          | 2 2.01                       | +16 35.6        | 1.917           | 2.770     | 13.2    | 20.8 | 9 18          | 2 5.49                        | +24 21.2        | 2.374           | 3.179     | 12.6    | 20.6 |
| 9 28          | 1 57.73                      | +15 39.3        | 1.856           | 2.781     | 9.7     | 20.6 | 9 28          | 2 0.15                        | +24 17.1        | 2.296           | 3.183     | 9.9     | 20.5 |
| 10 8          | 1 51.75                      | +14 28.4        | 1.819           | 2.792     | 5.8     | 20.4 | 10 8          | 1 53.16                       | +23 57.0        | 2.242           | 3.186     | 7.0     | 20.3 |
| 10 18         | 1 44.78                      | +13 7.3         | 1.809           | 2.804     | 1.7     | 20.1 | 10 18         | 1 45.14                       | +23 21.5        | 2.214           | 3.189     | 4.4     | 20.1 |
| 10 28         | 1 37.72                      | +11 42.7        | 1.828           | 2.816     | 2.8     | 20.3 | 10 28         | 1 36.92                       | +22 33.3        | 2.214           | 3.192     | 3.8     | 20.1 |
| 11 7          | 1 31.47                      | +10 21.9        | 1.875           | 2.828     | 6.8     | 20.5 | 11 7          | 1 29.37                       | +21 37.3        | 2.244           | 3.195     | 6.0     | 20.2 |
| 11 17         | 1 26.74                      | +9 11.4         | 1.949           | 2.840     | 10.4    | 20.8 | 11 17         | 1 23.21                       | +20 39.2        | 2.302           | 3.198     | 8.8     | 20.4 |
| 11 27         | 1 24.02                      | +8 15.9         | 2.046           | 2.853     | 13.5    | 21.0 | 11 27         | 1 18.97                       | +19 44.8        | 2.384           | 3.200     | 11.5    | 20.6 |
| <b>106963</b> | 2000 <i>YC</i> <sub>81</sub> |                 | 10 20.9 303°93' | 1°3'/19.9 | 18      |      | <b>234920</b> | 2002 <i>TK</i> <sub>350</sub> |                 | 10 20.9 1°61'   | 1°4'/19.3 | 18      |      |
| 9 18          | 2 5.18                       | +10 8.0         | 1.562           | 2.437     | 14.5    | 19.5 | 9 18          | 2 0.86                        | +10 46.4        | 2.094           | 2.962     | 11.7    | 20.1 |
| 9 28          | 2 0.58                       | +9 25.7         | 1.485           | 2.424     | 10.6    | 19.3 | 9 28          | 1 56.82                       | +9 28.8         | 2.026           | 2.962     | 8.4     | 19.9 |
| 10 8          | 1 53.69                      | +8 32.0         | 1.431           | 2.411     | 6.1     | 19.0 | 10 8          | 1 51.23                       | +8 0.9          | 1.983           | 2.961     | 4.7     | 19.7 |
| 10 18         | 1 45.28                      | +7 31.6         | 1.403           | 2.398     | 1.6     | 18.6 | 10 18         | 1 44.70                       | +6 28.4         | 1.967           | 2.962     | 1.5     | 19.4 |
| 10 28         | 1 36.46                      | +6 31.7         | 1.401           | 2.385     | 4.4     | 18.8 | 10 28         | 1 38.02                       | +4 58.3         | 1.981           | 2.962     | 3.8     | 19.6 |
| 11 7          | 1 28.47                      | +5 40.1         | 1.426           | 2.372     | 9.2     | 19.1 | 11 7          | 1 32.01                       | +3 37.4         | 2.024           | 2.963     | 7.4     | 19.8 |
| 11 17         | 1 22.32                      | +5 3.0          | 1.475           | 2.360     | 13.6    | 19.3 | 11 17         | 1 27.33                       | +2 31.3         | 2.093           | 2.964     | 10.8    | 20.0 |
| 11 27         | 1 18.75                      | +4 44.4         | 1.545           | 2.348     | 17.3    | 19.5 | 11 27         | 1 24.48                       | +1 43.3         | 2.185           | 2.965     | 13.6    | 20.2 |
| <b>43205</b>  | 2000 <i>AV</i> <sub>72</sub> |                 | 10 20.9 181°11' | 6°0'/14.9 | 18      |      | <b>484935</b> | 2009 <i>SS</i> <sub>156</sub> |                 | 10 20.9 56°35'  | 2°3'/18.5 | 18      |      |
| 9 18          | 2 5.59                       | -8 18.8         | 2.400           | 3.265     | 10.5    | 18.8 | 9 18          | 2 2.47                        | +7 42.8         | 1.984           | 2.857     | 12.0    | 21.3 |
| 9 28          | 2 0.00                       | -9 7.0          | 2.345           | 3.266     | 8.2     | 18.7 | 9 28          | 1 57.95                       | +6 28.3         | 1.932           | 2.871     | 8.5     | 21.1 |
| 10 8          | 1 52.95                      | -9 49.1         | 2.315           | 3.266     | 6.4     | 18.6 | 10 8          | 1 51.84                       | +5 7.2          | 1.905           | 2.884     | 4.9     | 20.9 |
| 10 18         | 1 45.06                      | -10 19.9        | 2.313           | 3.266     | 6.0     | 18.6 | 10 18         | 1 44.84                       | +3 45.5         | 1.906           | 2.898     | 2.3     | 20.8 |
| 10 28         | 1 37.06                      | -10 35.1        | 2.338           | 3.266     | 7.4     | 18.7 | 10 28         | 1 37.78                       | +2 30.1         | 1.936           | 2.912     | 4.5     | 20.9 |
| 11 7          | 1 29.72                      | -10 32.4        | 2.391           | 3.265     | 9.6     | 18.8 | 11 7          | 1 31.50                       | +1 27.0         | 1.994           | 2.926     | 8.0     | 21.2 |
| 11 17         | 1 23.67                      | -10 11.5        | 2.468           | 3.265     | 11.8    | 18.9 | 11 17         | 1 26.66                       | +0 40.5         | 2.078           | 2.941     | 11.2    | 21.4 |
| 11 27         | 1 19.37                      | -9 33.5         | 2.566           | 3.264     | 13.8    | 19.1 | 11 27         | 1 23.73                       | +0 12.4         | 2.183           | 2.955     | 13.9    | 21.6 |
| <b>103359</b> | 2000 <i>AH</i> <sub>93</sub> |                 | 10 20.9 180°39' | 8°8'/9.5  | 18      |      | <b>330117</b> | 2005 <i>XC</i> <sub>107</sub> |                 | 10 20.9 291°25' | 2°3'/18.6 | 17      |      |
| 9 18          | 2 7.73                       | -22 10.6        | 2.768           | 3.591     | 10.5    | 20.7 | 9 18          | 2 3.01                        | +5 54.2         | 2.176           | 3.047     | 11.2    | 21.6 |
| 9 28          | 2 1.41                       | -23 24.9        | 2.731           | 3.592     | 9.4     | 20.6 | 9 28          | 1 58.41                       | +5 6.1          | 2.097           | 3.034     | 8.1     | 21.4 |
| 10 8          | 1 53.71                      | -24 25.3        | 2.718           | 3.593     | 8.8     | 20.5 | 10 8          | 1 52.20                       | +4 12.5         | 2.044           | 3.022     | 4.7     | 21.2 |
| 10 18         | 1 45.23                      | -25 6.2         | 2.731           | 3.594     | 9.1     | 20.6 | 10 18         | 1 44.95                       | +3 18.1         | 2.018           | 3.009     | 2.3     | 21.0 |
| 10 28         | 1 36.68                      | -25 23.9        | 2.769           | 3.593     | 10.1    | 20.6 | 10 28         | 1 37.45                       | +2 28.2         | 2.021           | 2.996     | 4.4     | 21.1 |
| 11 7          | 1 28.80                      | -25 17.3        | 2.831           | 3.592     | 11.4    | 20.7 | 11 7          | 1 30.53                       | +1 48.0         | 2.052           | 2.983     | 7.8     | 21.3 |
| 11 17         | 1 22.19                      | -24 47.7        | 2.915           | 3.590     | 12.8    | 20.9 | 11 17         | 1 24.91                       | +1 21.1         | 2.108           | 2.971     | 11.1    | 21.5 |
| 11 27         | 1 17.28                      | -23 57.7        | 3.016           | 3.587     | 14.0    | 21.0 | 11 27         | 1 21.14                       | +1 10.0         | 2.188           | 2.958     | 13.9    | 21.7 |
| <b>22261</b>  | 1980 <i>AB</i>               |                 | 10 20.9 299°85' | 11°6'/9.6 | 18      |      | <b>426104</b> | 2012 <i>FW</i> <sub>28</sub>  |                 | 10 20.9 218°01' | 0°5'/20.6 | 17      |      |
| 9 18          | 2 5.62                       | -16 11.5        | 1.612           | 2.483     | 14.4    | 17.3 | 9 18          | 2 10.78                       | +11 32.7        | 1.685           | 2.544     | 14.5    | 22.3 |
| 9 28          | 2 0.87                       | -18 1.0         | 1.554           | 2.461     | 12.5    | 17.2 | 9 28          | 2 4.54                        | +11 4.5         | 1.607           | 2.537     | 10.6    | 22.0 |
| 10 8          | 1 53.84                      | -19 37.1        | 1.518           | 2.439     | 11.6    | 17.1 | 10 8          | 1 55.96                       | +10 25.0        | 1.553           | 2.529     | 6.2     | 21.7 |
| 10 18         | 1 45.31                      | -20 48.8        | 1.505           | 2.417     | 12.1    | 17.0 | 10 18         | 1 45.83                       | +9 37.6         | 1.525           | 2.520     | 1.4     | 21.4 |
| 10 28         | 1 36.42                      | -21 27.1        | 1.516           | 2.395     | 13.9    | 17.1 | 10 28         | 1 35.32                       | +8 48.3         | 1.525           | 2.511     | 3.7     | 21.6 |
| 11 7          | 1 28.36                      | -21 28.1        | 1.548           | 2.374     | 16.4    | 17.2 | 11 7          | 1 25.67                       | +8 3.6          | 1.554           | 2.500     | 8.5     | 21.8 |
| 11 17         | 1 22.15                      | -20 52.6        | 1.598           | 2.352     | 19.0    | 17.3 | 11 17         | 1 17.92                       | +7 29.7         | 1.608           | 2.490     | 12.8    | 22.1 |
| 11 27         | 1 18.49                      | -19 44.8        | 1.663           | 2.332     | 21.2    | 17.5 | 11 27         | 1 12.79                       | +7 10.7         | 1.684           | 2.478     | 16.5    | 22.3 |
| <b>475971</b> | 2007 <i>KR</i> <sub>1</sub>  |                 | 10 20.9 95°36'  | 3°3'/17.8 | 16      |      | <b>326068</b> | 2011 <i>AL</i> <sub>58</sub>  |                 | 10 20.9 61°52'  | 5°2'/15.9 | 18      |      |
| 9 18          | 2 7.38                       | +5 28.1         | 1.825           | 2.697     | 12.9    | 21.5 | 9 18          | 2 4.43                        | -4 8.2          | 2.173           | 3.047     | 11.0    | 20.3 |
| 9 28          | 2 1.45                       | +4 2.5          | 1.785           | 2.722     | 9.2     | 21.3 | 9 28          | 1 59.27                       | -5 0.6          | 2.120           | 3.052     | 8.3     | 20.1 |
| 10 8          | 1 53.80                      | +2 32.7         | 1.770           | 2.748     | 5.4     | 21.2 | 10 8          | 1 52.59                       | -5 49.4         | 2.093           | 3.057     | 6.0     | 20.0 |
| 10 18         | 1 45.24                      | +1 5.7          | 1.784           | 2.772     | 3.3     | 21.1 | 10 18         | 1 45.02                       | -6 29.3         | 2.093           | 3.062     | 5.3     | 20.0 |
| 10 28         | 1 36.75                      | -0 10.7         | 1.827           | 2.796     | 5.5     | 21.3 | 10 28         | 1 37.36                       | -6 55.3         | 2.121           | 3.067     | 6.8     | 20.1 |
| 11 7          | 1 29.26                      | -1 10.7         | 1.897           | 2.820     | 9.0     | 21.5 | 11 7          | 1 30.40                       | -7 4.3          | 2.176           | 3.072     | 9.4     | 20.2 |
| 11 17         | 1 23.46                      | -1 50.8         | 1.993           | 2.843     | 12.2    | 21.8 | 11 17         | 1 24.82                       | -6 55.2         | 2.255           | 3.077     | 12.0    | 20.4 |
| 11 27         | 1 19.82                      | -2 10.3         | 2.110           | 2.865     | 14.9    | 22.0 | 11 27         | 1 21.07                       | -6 28.8         | 2.355           | 3.082     | 14.2    | 20.6 |
| <b>333966</b> | 2000 <i>FF</i> <sub>15</sub> |                 | 10 20.9 262°33' | 0°2'/20.7 | 17      |      | <b>55105</b>  | 2001 <i>QN</i> <sub>139</sub> |                 | 10 20.9 63°01'  | 5°1'/24.4 | 18      |      |
| 9 18          | 2 10.15                      | +9 48.5         | 2.828           |           |         |      |               |                               |                 |                 |           |         |      |

EPHEMERIDES

10 20.9

10 20.9

| 2020          | $\alpha_{2000}$        | $\delta_{2000}$              | $\Delta$ | $r$   | $\beta$ | $V$  | 2020  | $\alpha_{2000}$ | $\delta_{2000}$        | $\Delta$                    | $r$   | $\beta$ | $V$  |  |
|---------------|------------------------|------------------------------|----------|-------|---------|------|-------|-----------------|------------------------|-----------------------------|-------|---------|------|--|
| <b>394126</b> | 2006 GR <sub>41</sub>  | 10 20.9 262°36' 10.4/18.2 15 |          |       |         |      |       | <b>509212</b>   | 2006 SA <sub>141</sub> | 10 20.9 33°96' 0.1/20.9 17  |       |         |      |  |
| 9 18          | 2 27.98                | -11 48.2                     | 1.114    | 1.978 | 19.9    | 20.4 | 9 18  | 2 8.93          | +11 44.2               | 0.968                       | 1.860 | 19.8    | 20.2 |  |
| 9 28          | 2 18.21                | -11 47.2                     | 1.047    | 1.966 | 16.0    | 20.1 | 9 28  | 2 3.85          | +11 37.2               | 0.932                       | 1.878 | 14.4    | 19.9 |  |
| 10 8          | 2 4.39                 | -11 25.4                     | 1.001    | 1.954 | 12.2    | 19.9 | 10 8  | 1 55.70         | +11 15.7               | 0.916                       | 1.896 | 8.3     | 19.7 |  |
| 10 18         | 1 47.81                | -10 33.4                     | 0.978    | 1.942 | 10.4    | 19.8 | 10 18 | 1 45.78         | +10 44.6               | 0.921                       | 1.916 | 1.9     | 19.4 |  |
| 10 28         | 1 30.60                | -9 5.6                       | 0.980    | 1.930 | 12.2    | 19.8 | 10 28 | 1 35.87         | +10 11.6               | 0.949                       | 1.937 | 4.5     | 19.6 |  |
| 11 7          | 1 15.06                | -7 4.8                       | 1.008    | 1.917 | 16.3    | 20.0 | 11 7  | 1 27.67         | +9 45.1                | 1.001                       | 1.959 | 10.4    | 20.0 |  |
| 11 17         | 1 2.96                 | -4 39.1                      | 1.059    | 1.904 | 20.8    | 20.2 | 11 17 | 1 22.31         | +9 31.5                | 1.074                       | 1.982 | 15.4    | 20.4 |  |
| 11 27         | 0 55.23                | -1 57.8                      | 1.129    | 1.892 | 24.7    | 20.5 | 11 27 | 1 20.36         | +9 34.3                | 1.166                       | 2.005 | 19.5    | 20.7 |  |
| <b>254331</b> | 2004 SO <sub>31</sub>  | 10 20.9 273°95' 0°9/19.9 18  |          |       |         |      |       | <b>393419</b>   | 2001 RS <sub>18</sub>  | 10 20.9 48°93' 2°5/22.9 18  |       |         |      |  |
| 9 18          | 2 2.79                 | +11 8.5                      | 2.186    | 3.048 | 11.5    | 20.1 | 9 18  | 2 8.21          | +18 38.6               | 1.547                       | 2.396 | 16.1    | 20.4 |  |
| 9 28          | 1 58.25                | +10 15.4                     | 2.106    | 3.038 | 8.3     | 19.9 | 9 28  | 2 2.53          | +18 34.5               | 1.501                       | 2.419 | 12.1    | 20.2 |  |
| 10 8          | 1 52.11                | +9 12.4                      | 2.050    | 3.028 | 4.8     | 19.7 | 10 8  | 1 54.65         | +18 13.4               | 1.477                       | 2.443 | 7.7     | 20.0 |  |
| 10 18         | 1 44.93                | +8 3.8                       | 2.023    | 3.018 | 1.2     | 19.4 | 10 18 | 1 45.53         | +17 37.4               | 1.477                       | 2.467 | 3.5     | 19.8 |  |
| 10 28         | 1 37.53                | +6 55.2                      | 2.024    | 3.008 | 3.3     | 19.5 | 10 28 | 1 36.39         | +16 51.6               | 1.505                       | 2.491 | 3.5     | 19.9 |  |
| 11 7          | 1 30.73                | +5 52.5                      | 2.055    | 2.998 | 7.1     | 19.8 | 11 7  | 1 28.42         | +16 3.2                | 1.559                       | 2.516 | 7.5     | 20.2 |  |
| 11 17         | 1 25.24                | +5 0.9                       | 2.112    | 2.988 | 10.5    | 20.0 | 11 17 | 1 22.50         | +15 19.0               | 1.639                       | 2.540 | 11.4    | 20.5 |  |
| 11 27         | 1 21.61                | +4 24.0                      | 2.193    | 2.977 | 13.4    | 20.2 | 11 27 | 1 19.17         | +14 44.9               | 1.741                       | 2.565 | 14.7    | 20.8 |  |
| <b>506627</b> | 2006 JR <sub>11</sub>  | 10 20.9 202°06' 4°9/17.5 17  |          |       |         |      |       | <b>481500</b>   | 2007 DA <sub>114</sub> | 10 20.9 192°54' 3°2/17.4 18 |       |         |      |  |
| 9 18          | 2 9.74                 | +1 52.8                      | 1.422    | 2.305 | 15.2    | 21.3 | 9 18  | 2 2.76          | +3 41.6                | 2.283                       | 3.156 | 10.6    | 21.9 |  |
| 9 28          | 2 3.91                 | +0 51.5                      | 1.363    | 2.304 | 11.1    | 21.1 | 9 28  | 1 58.09         | +2 30.8                | 2.218                       | 3.156 | 7.7     | 21.7 |  |
| 10 8          | 1 55.60                | -0 12.5                      | 1.326    | 2.302 | 7.0     | 20.8 | 10 8  | 1 51.95         | +1 16.4                | 2.179                       | 3.155 | 4.7     | 21.5 |  |
| 10 18         | 1 45.74                | -1 11.5                      | 1.315    | 2.300 | 4.9     | 20.7 | 10 18 | 1 44.93         | +0 3.8                 | 2.168                       | 3.154 | 3.2     | 21.4 |  |
| 10 28         | 1 35.64                | -1 56.9                      | 1.330    | 2.298 | 7.4     | 20.9 | 10 28 | 1 37.77         | -1 1.0                 | 2.187                       | 3.153 | 5.0     | 21.5 |  |
| 11 7          | 1 26.61                | -2 22.3                      | 1.371    | 2.296 | 11.5    | 21.1 | 11 7  | 1 31.23         | -1 53.0                | 2.233                       | 3.152 | 8.0     | 21.7 |  |
| 11 17         | 1 19.72                | -2 24.8                      | 1.435    | 2.293 | 15.6    | 21.3 | 11 17 | 1 25.93         | -2 28.9                | 2.306                       | 3.151 | 10.9    | 21.9 |  |
| 11 27         | 1 15.65                | -2 4.4                       | 1.517    | 2.290 | 19.0    | 21.6 | 11 27 | 1 22.38         | -2 47.0                | 2.401                       | 3.149 | 13.4    | 22.1 |  |
| <b>112202</b> | 2002 JK <sub>120</sub> | 10 20.9 258°85' 4°6/17.8 18  |          |       |         |      |       | <b>174759</b>   | 2003 VT <sub>4</sub>   | 10 20.9 138°44' 1°1/20.2 18 |       |         |      |  |
| 9 18          | 2 9.22                 | +2 22.3                      | 1.401    | 2.286 | 15.3    | 19.5 | 9 18  | 2 12.03         | +9 8.1                 | 1.522                       | 2.389 | 15.3    | 20.1 |  |
| 9 28          | 2 3.59                 | +1 30.2                      | 1.340    | 2.282 | 11.2    | 19.2 | 9 28  | 2 5.47          | +8 53.4                | 1.461                       | 2.395 | 11.1    | 19.9 |  |
| 10 8          | 1 55.45                | +0 35.1                      | 1.301    | 2.278 | 7.0     | 19.0 | 10 8  | 1 56.49         | +8 30.3                | 1.422                       | 2.400 | 6.4     | 19.7 |  |
| 10 18         | 1 45.72                | -0 15.9                      | 1.287    | 2.274 | 4.6     | 18.8 | 10 18 | 1 46.00         | +8 2.6                 | 1.410                       | 2.405 | 1.6     | 19.4 |  |
| 10 28         | 1 35.70                | -0 54.4                      | 1.300    | 2.270 | 7.1     | 19.0 | 10 28 | 1 35.28         | +7 35.8                | 1.425                       | 2.410 | 4.2     | 19.6 |  |
| 11 7          | 1 26.74                | -1 14.3                      | 1.338    | 2.267 | 11.4    | 19.2 | 11 7  | 1 25.66         | +7 15.6                | 1.468                       | 2.414 | 9.0     | 19.9 |  |
| 11 17         | 1 19.92                | -1 12.6                      | 1.398    | 2.263 | 15.5    | 19.5 | 11 17 | 1 18.16         | +7 6.5                 | 1.535                       | 2.418 | 13.3    | 20.1 |  |
| 11 27         | 1 15.94                | -0 48.9                      | 1.478    | 2.259 | 19.0    | 19.7 | 11 27 | 1 13.45         | +7 11.4                | 1.623                       | 2.422 | 16.8    | 20.4 |  |
| <b>283342</b> | 1999 TV <sub>249</sub> | 10 20.9 1°87' 2°1/22.6 18    |          |       |         |      |       | <b>371375</b>   | 2006 QW <sub>79</sub>  | 10 20.9 80°82' 4°0/23.8 15  |       |         |      |  |
| 9 18          | 2 3.11                 | +19 5.5                      | 1.399    | 2.260 | 16.7    | 20.0 | 9 18  | 2 12.50         | +21 50.2               | 1.378                       | 2.217 | 18.2    | 21.0 |  |
| 9 28          | 1 59.25                | +18 29.1                     | 1.333    | 2.259 | 12.7    | 19.7 | 9 28  | 2 5.96          | +21 51.3               | 1.329                       | 2.238 | 14.0    | 20.8 |  |
| 10 8          | 1 52.97                | +17 31.1                     | 1.288    | 2.258 | 8.0     | 19.5 | 10 8  | 1 56.77         | +21 30.0               | 1.301                       | 2.260 | 9.4     | 20.6 |  |
| 10 18         | 1 45.16                | +16 14.9                     | 1.267    | 2.259 | 3.3     | 19.2 | 10 18 | 1 46.05         | +20 47.5               | 1.296                       | 2.281 | 5.1     | 20.4 |  |
| 10 28         | 1 37.07                | +14 48.1                     | 1.272    | 2.259 | 3.6     | 19.2 | 10 28 | 1 35.28         | +19 49.2               | 1.318                       | 2.302 | 4.6     | 20.4 |  |
| 11 7          | 1 30.01                | +13 20.9                     | 1.302    | 2.261 | 8.3     | 19.5 | 11 7  | 1 25.92         | +18 44.2               | 1.366                       | 2.322 | 8.4     | 20.7 |  |
| 11 17         | 1 25.00                | +12 3.0                      | 1.357    | 2.264 | 12.9    | 19.8 | 11 17 | 1 19.02         | +17 41.7               | 1.439                       | 2.343 | 12.6    | 21.0 |  |
| 11 27         | 1 22.70                | +11 2.0                      | 1.433    | 2.267 | 16.8    | 20.1 | 11 27 | 1 15.18         | +16 49.9               | 1.534                       | 2.363 | 16.2    | 21.3 |  |
| <b>392309</b> | 2010 CO <sub>226</sub> | 10 20.9 356°17' 2°2/17.2 18  |          |       |         |      |       | <b>39641</b>    | 1995 KM <sub>1</sub>   | 10 20.9 60°29' 3°4/18.7 17  |       |         |      |  |
| 9 18          | 1 57.44                | +0 43.6                      | 3.991    | 4.859 | 6.6     | 20.8 | 9 18  | 2 10.55         | +5 53.2                | 1.186                       | 2.074 | 17.3    | 18.2 |  |
| 9 28          | 1 53.73                | +0 10.2                      | 3.925    | 4.858 | 4.8     | 20.7 | 9 28  | 2 4.43          | +4 57.6                | 1.154                       | 2.099 | 12.3    | 18.0 |  |
| 10 8          | 1 49.23                | -0 23.1                      | 3.885    | 4.857 | 3.0     | 20.6 | 10 8  | 1 55.79         | +3 56.5                | 1.144                       | 2.124 | 7.1     | 17.8 |  |
| 10 18         | 1 44.27                | -0 54.1                      | 3.875    | 4.857 | 2.2     | 20.5 | 10 18 | 1 45.80         | +2 57.9                | 1.158                       | 2.149 | 3.5     | 17.6 |  |
| 10 28         | 1 39.22                | -1 20.3                      | 3.895    | 4.856 | 3.3     | 20.6 | 10 28 | 1 35.98         | +2 10.5                | 1.197                       | 2.175 | 6.2     | 17.9 |  |
| 11 7          | 1 34.49                | -1 39.5                      | 3.944    | 4.856 | 5.1     | 20.7 | 11 7  | 1 27.68         | +1 40.9                | 1.261                       | 2.201 | 10.9    | 18.2 |  |
| 11 17         | 1 30.42                | -1 50.3                      | 4.021    | 4.856 | 6.9     | 20.9 | 11 17 | 1 21.86         | +1 32.0                | 1.348                       | 2.226 | 15.1    | 18.5 |  |
| 11 27         | 1 27.32                | -1 51.8                      | 4.122    | 4.856 | 8.5     | 21.0 | 11 27 | 1 19.00         | +1 44.2                | 1.455                       | 2.252 | 18.5    | 18.8 |  |
| <b>491295</b> | 2011 WA <sub>2</sub>   | 10 20.9 332°68' 5°5/17.0 18  |          |       |         |      |       | <b>243884</b>   | 2000 YB <sub>56</sub>  | 10 20.9 299°03' 7°0/26.8 18 |       |         |      |  |
| 9 18          | 2 7.27                 | -2 30.4                      | 1.669    | 2.550 | 13.4    | 20.8 | 9 18  | 2 6.49          | +30 4.5                | 1.668                       | 2.467 | 17.3    | 20.2 |  |
| 9 28          | 2 1.86                 | -3 5.7                       | 1.605    | 2.543 | 10.1    | 20.6 | 9 28  | 2 1.87          | +30 19.1               | 1.578                       | 2.450 | 14.4    | 19.9 |  |
| 10 8          | 1 54.34                | -3 38.1                      | 1.565    | 2.535 | 6.9     | 20.4 | 10 8  | 1 54.67         | +30 7.9                | 1.507                       | 2.434 | 11.1    | 19.7 |  |
| 10 18         | 1 45.48                | -4 1.3                       | 1.551    | 2.529 | 5.5     | 20.3 | 10 18 | 1 45.65         | +29 28.2               | 1.459                       | 2.418 | 8.2     | 19.5 |  |
| 10 28         | 1 36.36                | -4 9.8                       | 1.563    | 2.522 | 7.4     | 20.4 | 10 28 | 1 36.06         | +28 21.5               | 1.435                       | 2.403 | 7.0     | 19.4 |  |
| 11 7          | 1 28.11                | -3 59.7                      | 1.601    | 2.517 | 10.8    | 20.6 | 11 7  | 1 27.28         | +26 54.5               | 1.438                       | 2.387 | 8.9     | 19.5 |  |
| 11 17         | 1 21.64                | -3 30.1                      | 1.662    | 2.511 | 14.3    | 20.8 | 11 17 | 1 20.52         | +25 17.4               | 1.466                       | 2.372 | 12.2    | 19.6 |  |
| 11 27         | 1 17.60                | -2 41.9                      | 1.744    | 2.506 | 17.2    | 21.0 | 11 27 | 1 16.64         | +23 41.6               | 1.517                       | 2.357 | 15.8    | 19.8 |  |
| <b>454709</b> | 2014 SS <sub>124</sub> | 10 20.9 239°93' 1°0/19.8 17  |          |       |         |      |       | <b>345525</b>   | 2006 KQ <sub>108</sub> | 10 20.9 228°65' 1°0/20.1 18 |       |         |      |  |
| 9 18          | 2 3.44                 | +8 55.4                      | 2.622    | 3.480 | 9.9     | 21.9 | 9 18  | 2 8.40          | +9 26.3                | 1.958                       | 2.819 | 12.7    | 21.5 |  |
| 9 28          | 1 58.49                | +8 22.8                      | 2.540    | 3.471 | 7.2     | 21.8 | 9 28  | 2 2.53          | +9 3.4                 | 1.880                       | 2.811 | 9.3     | 21.2 |  |
| 10 8          | 1 52.17                | +7 44.3                      | 2.484    | 3.461 | 4.1     | 21.5 | 10 8  | 1 54.71         | +8 32.8                | 1.827                       | 2.803 | 5.3     | 21.0 |  |
| 10 18         | 1 44.97                | +7 2.9                       | 2.457    | 3.452 | 1.2     | 21.3 | 10 18 | 1 45.63         | +7 57.9                | 1.800                       | 2.795 | 1.3     | 20.7 |  |
| 10 28         | 1 37.58                | +6 22.5                      | 2.460    | 3.442 | 3.0     | 21.4 | 10 28 | 1 36.24         | +7 23.3                | 1.803                       | 2.787 | 3.6     | 20.8 |  |
| 11 7          | 1 30.68                | +5 47.1                      | 2.492    | 3.432 | 6.2     | 21.6 | 11 7  | 1 27.56         | +6 54.1                | 1.834                       | 2.778 | 7.7     | 21.1 |  |
| 11 17         | 1 24.89                | +5 20.1                      | 2.552    | 3.422 | 9.1     | 21.8 | 11 17 | 1 20.47         | +6 34.6                | 1.892                       | 2.769 | 11.5    | 21.3 |  |
| 11 27         | 1 20.69                | +5 4.0                       | 2.636    | 3.411 | 11.7    | 22.0 | 11 27 | 1 15.59         | +6 27.8                | 1.972                       | 2.759 | 14.7    | 21.5 |  |
| <b>510215</b> | 2011 DJ <sub>49</sub>  | 10 20.9 242°26' 1°6/19.6 18  |          |       |         |      |       | <b>321574</b>   | 2009 TQ <sub>12</sub>  | 10 20.9 57°91' 0°9/19.9 18  |       |         |      |  |
| 9 18          | 2 7.83                 | +9 30.3                      | 1.729    | 2.596 | 13.8    | 22.3 | 9 18  | 2 2.79          | +11 22.0               | 2.048                       | 2.912 | 12.1    | 20.7 |  |
| 9 28          | 2 2.35                 | +8 40.7                      | 1.649    | 2.584 | 10.0    | 22.0 | 9 28  | 1 58.22         | +10 23.1               | 1.989                       | 2.922 | 8.7     | 20.5 |  |
| 10 8          | 1 54.69                | +7 40.6                      | 1.594    |       |         |      |       |                 |                        |                             |       |         |      |  |

EPHEMERIDES

10 20.9

10 20.9

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$     | $\beta$  | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$     | $\beta$  | $V$  |
|---------------|-------------------------------|-----------------|----------|---------|----------|------|---------------|-------------------------------|-----------------|----------|---------|----------|------|
| <b>154218</b> | 2002 <i>JL</i> <sub>61</sub>  |                 | 10 20.9  | 78°46'  | 1°6/19.1 | 18   | <b>220535</b> | 2004 <i>FJ</i> <sub>36</sub>  |                 | 10 20.9  | 144°52' | 1°2/20.1 | 18   |
| 9 18          | 2 3.87                        | + 9 18.8        | 2.251    | 3.113   | 11.2     | 19.3 | 9 18          | 2 11.09                       | + 8 51.2        | 1.650    | 2.516   | 14.4     | 19.8 |
| 9 28          | 1 58.75                       | + 8 4.4         | 2.206    | 3.139   | 7.9      | 19.2 | 9 28          | 2 4.67                        | + 8 34.4        | 1.588    | 2.521   | 10.5     | 19.6 |
| 10 8          | 1 52.25                       | + 6 43.5        | 2.187    | 3.165   | 4.5      | 19.0 | 10 8          | 1 56.01                       | + 8 9.9         | 1.548    | 2.525   | 6.0      | 19.3 |
| 10 18         | 1 45.02                       | + 5 21.3        | 2.197    | 3.191   | 1.7      | 18.8 | 10 18         | 1 45.96                       | + 7 41.5        | 1.535    | 2.530   | 1.6      | 19.0 |
| 10 28         | 1 37.81                       | + 4 4.0         | 2.238    | 3.216   | 3.7      | 19.0 | 10 28         | 1 35.70                       | + 7 14.4        | 1.550    | 2.534   | 4.0      | 19.2 |
| 11 7          | 1 31.37                       | + 2 57.0        | 2.307    | 3.241   | 6.9      | 19.3 | 11 7          | 1 26.43                       | + 6 53.8        | 1.593    | 2.538   | 8.5      | 19.5 |
| 11 17         | 1 26.27                       | + 2 4.2         | 2.404    | 3.266   | 9.9      | 19.5 | 11 17         | 1 19.11                       | + 6 43.9        | 1.661    | 2.541   | 12.6     | 19.8 |
| 11 27         | 1 22.91                       | + 1 27.7        | 2.524    | 3.290   | 12.4     | 19.7 | 11 27         | 1 14.37                       | + 6 47.5        | 1.751    | 2.544   | 16.0     | 20.0 |
| <b>163906</b> | 2003 <i>SA</i> <sub>226</sub> |                 | 10 20.9  | 356°66' | 0°5/20.6 | 18   | <b>151720</b> | 2003 <i>BR</i> <sub>58</sub>  |                 | 10 20.9  | 225°79' | 0°4/21.3 | 18   |
| 9 18          | 2 5.40                        | +10 23.2        | 1.254    | 2.140   | 16.6     | 19.1 | 9 18          | 2 8.16                        | +14 11.7        | 1.879    | 2.731   | 13.5     | 21.0 |
| 9 28          | 2 1.14                        | +10 18.6        | 1.192    | 2.135   | 12.2     | 18.9 | 9 28          | 2 2.50                        | +13 40.1        | 1.798    | 2.722   | 10.0     | 20.8 |
| 10 8          | 1 54.21                       | +10 3.3         | 1.151    | 2.132   | 7.1      | 18.6 | 10 8          | 1 54.77                       | +12 55.5        | 1.740    | 2.713   | 6.0      | 20.5 |
| 10 18         | 1 45.55                       | + 9 41.0        | 1.134    | 2.129   | 1.6      | 18.2 | 10 18         | 1 45.69                       | +12 0.9         | 1.709    | 2.703   | 1.5      | 20.2 |
| 10 28         | 1 36.51                       | + 9 17.5        | 1.141    | 2.128   | 4.2      | 18.4 | 10 28         | 1 36.28                       | +11 1.8         | 1.707    | 2.693   | 3.1      | 20.3 |
| 11 7          | 1 28.55                       | + 8 59.6        | 1.173    | 2.128   | 9.6      | 18.7 | 11 7          | 1 27.61                       | +10 4.8         | 1.733    | 2.683   | 7.5      | 20.6 |
| 11 17         | 1 22.83                       | + 8 52.6        | 1.227    | 2.129   | 14.4     | 19.0 | 11 17         | 1 20.60                       | + 9 16.0        | 1.786    | 2.672   | 11.5     | 20.8 |
| 11 27         | 1 20.10                       | + 9 0.3         | 1.302    | 2.132   | 18.4     | 19.3 | 11 27         | 1 15.91                       | + 8 40.4        | 1.862    | 2.660   | 15.0     | 21.0 |
| <b>25093</b>  | Andmikhaylov                  |                 | 10 20.9  | 78°83'  | 1°7/19.6 | 18   | <b>108103</b> | 2001 <i>FY</i> <sub>188</sub> |                 | 10 20.9  | 339°41' | 8°7/12.8 | 18   |
| 9 18          | 2 7.10                        | +10 20.5        | 1.431    | 2.307   | 15.5     | 18.4 | 9 18          | 2 4.71                        | -12 45.6        | 1.916    | 2.786   | 12.5     | 18.9 |
| 9 28          | 2 1.88                        | + 9 15.7        | 1.379    | 2.318   | 11.2     | 18.2 | 9 28          | 1 59.78                       | -13 56.2        | 1.866    | 2.781   | 10.3     | 18.7 |
| 10 8          | 1 54.38                       | + 7 59.1        | 1.349    | 2.329   | 6.3      | 18.0 | 10 8          | 1 53.07                       | -14 55.9        | 1.839    | 2.776   | 8.9      | 18.6 |
| 10 18         | 1 45.54                       | + 6 37.6        | 1.345    | 2.340   | 1.9      | 17.7 | 10 18         | 1 45.27                       | -15 37.4        | 1.838    | 2.771   | 8.9      | 18.6 |
| 10 28         | 1 36.60                       | + 5 20.3        | 1.369    | 2.351   | 4.7      | 17.9 | 10 28         | 1 37.33                       | -15 55.0        | 1.862    | 2.767   | 10.4     | 18.7 |
| 11 7          | 1 28.80                       | + 4 15.8        | 1.418    | 2.362   | 9.5      | 18.3 | 11 7          | 1 30.18                       | -15 46.3        | 1.910    | 2.763   | 12.6     | 18.9 |
| 11 17         | 1 23.06                       | + 3 29.9        | 1.492    | 2.373   | 13.7     | 18.5 | 11 17         | 1 24.59                       | -15 11.8        | 1.980    | 2.760   | 14.9     | 19.0 |
| 11 27         | 1 19.96                       | + 3 5.5         | 1.586    | 2.384   | 17.2     | 18.8 | 11 27         | 1 21.08                       | -14 14.3        | 2.067    | 2.756   | 17.0     | 19.2 |
| <b>220665</b> | 2004 <i>RA</i> <sub>187</sub> |                 | 10 20.9  | 4°20'   | 6°0/26.3 | 17   | <b>517082</b> | 2013 <i>CN</i> <sub>109</sub> |                 | 10 20.9  | 328°62' | 1°4/22.0 | 18   |
| 9 18          | 2 5.51                        | +28 0.2         | 1.821    | 2.625   | 15.8     | 20.3 | 9 18          | 2 7.83                        | +15 21.7        | 1.857    | 2.706   | 13.8     | 21.5 |
| 9 28          | 2 0.77                        | +28 22.4        | 1.747    | 2.625   | 12.9     | 20.1 | 9 28          | 2 2.24                        | +15 21.4        | 1.783    | 2.705   | 10.3     | 21.3 |
| 10 8          | 1 53.83                       | +28 23.0        | 1.693    | 2.626   | 9.8      | 19.9 | 10 8          | 1 54.60                       | +15 9.1         | 1.733    | 2.703   | 6.3      | 21.0 |
| 10 18         | 1 45.45                       | +28 0.7         | 1.663    | 2.627   | 7.0      | 19.7 | 10 18         | 1 45.65                       | +14 46.5        | 1.710    | 2.702   | 2.3      | 20.8 |
| 10 28         | 1 36.73                       | +27 17.6        | 1.659    | 2.628   | 6.0      | 19.7 | 10 28         | 1 36.40                       | +14 17.2        | 1.714    | 2.701   | 3.0      | 20.8 |
| 11 7          | 1 28.85                       | +26 19.3        | 1.682    | 2.630   | 7.8      | 19.8 | 11 7          | 1 27.95                       | +13 46.4        | 1.747    | 2.700   | 7.1      | 21.1 |
| 11 17         | 1 22.79                       | +25 13.6        | 1.730    | 2.633   | 10.8     | 20.0 | 11 17         | 1 21.18                       | +13 19.3        | 1.805    | 2.699   | 11.0     | 21.3 |
| 11 27         | 1 19.22                       | +24 9.1         | 1.801    | 2.636   | 13.9     | 20.2 | 11 27         | 1 16.75                       | +13 0.7         | 1.887    | 2.698   | 14.3     | 21.5 |
| <b>395035</b> | 2009 <i>DF</i> <sub>63</sub>  |                 | 10 20.9  | 121°26' | 2°0/18.9 | 18   | <b>322933</b> | 2002 <i>EJ</i> <sub>126</sub> |                 | 10 20.9  | 256°59' | 3°2/23.2 | 18   |
| 9 18          | 2 6.48                        | + 6 30.6        | 2.163    | 3.027   | 11.5     | 21.2 | 9 18          | 2 9.69                        | +20 18.0        | 1.494    | 2.337   | 16.8     | 21.2 |
| 9 28          | 2 0.77                        | + 5 47.2        | 2.107    | 3.040   | 8.2      | 21.0 | 9 28          | 2 4.25                        | +20 11.2        | 1.411    | 2.325   | 13.0     | 20.9 |
| 10 8          | 1 53.51                       | + 4 59.2        | 2.076    | 3.053   | 4.7      | 20.8 | 10 8          | 1 56.10                       | +19 43.8        | 1.350    | 2.313   | 8.6      | 20.7 |
| 10 18         | 1 45.33                       | + 4 10.9        | 2.073    | 3.065   | 2.1      | 20.7 | 10 18         | 1 46.07                       | +18 56.2        | 1.312    | 2.300   | 4.3      | 20.4 |
| 10 28         | 1 37.09                       | + 3 27.3        | 2.100    | 3.077   | 4.0      | 20.8 | 10 28         | 1 35.47                       | +17 53.0        | 1.301    | 2.287   | 4.1      | 20.3 |
| 11 7          | 1 29.60                       | + 2 52.8        | 2.155    | 3.088   | 7.4      | 21.1 | 11 7          | 1 25.78                       | +16 42.4        | 1.317    | 2.273   | 8.6      | 20.6 |
| 11 17         | 1 23.55                       | + 2 30.8        | 2.237    | 3.099   | 10.5     | 21.3 | 11 17         | 1 18.23                       | +15 34.0        | 1.357    | 2.260   | 13.2     | 20.8 |
| 11 27         | 1 19.41                       | + 2 22.9        | 2.342    | 3.110   | 13.2     | 21.5 | 11 27         | 1 13.69                       | +14 36.7        | 1.419    | 2.246   | 17.4     | 21.0 |
| <b>510539</b> | 2012 <i>HK</i> <sub>58</sub>  |                 | 10 20.9  | 211°72' | 1°9/19.7 | 17   | <b>145016</b> | 2005 <i>EE</i> <sub>242</sub> |                 | 10 20.9  | 130°29' | 0°3/20.7 | 18   |
| 9 18          | 2 11.34                       | + 7 32.5        | 1.584    | 2.453   | 14.7     | 21.7 | 9 18          | 2 9.71                        | +10 51.6        | 2.321    | 3.168   | 11.5     | 20.3 |
| 9 28          | 2 5.02                        | + 7 5.9         | 1.514    | 2.449   | 10.7     | 21.4 | 9 28          | 2 3.07                        | +10 38.8        | 2.260    | 3.183   | 8.3      | 20.2 |
| 10 8          | 1 56.30                       | + 6 31.9        | 1.467    | 2.445   | 6.2      | 21.2 | 10 8          | 1 54.84                       | +10 19.1        | 2.224    | 3.198   | 4.8      | 20.0 |
| 10 18         | 1 46.02                       | + 5 55.1        | 1.446    | 2.440   | 2.1      | 20.9 | 10 18         | 1 45.70                       | + 9 54.9        | 2.217    | 3.212   | 1.1      | 19.7 |
| 10 28         | 1 35.40                       | + 5 21.4        | 1.453    | 2.435   | 4.7      | 21.0 | 10 28         | 1 36.47                       | + 9 29.7        | 2.241    | 3.226   | 2.7      | 19.9 |
| 11 7          | 1 25.73                       | + 4 56.9        | 1.487    | 2.429   | 9.3      | 21.3 | 11 7          | 1 27.99                       | + 9 7.4         | 2.294    | 3.239   | 6.3      | 20.1 |
| 11 17         | 1 18.07                       | + 4 45.8        | 1.546    | 2.423   | 13.6     | 21.6 | 11 17         | 1 20.95                       | + 8 51.4        | 2.376    | 3.252   | 9.5      | 20.4 |
| 11 27         | 1 13.12                       | + 4 51.0        | 1.627    | 2.416   | 17.2     | 21.8 | 11 27         | 1 15.84                       | + 8 44.3        | 2.482    | 3.263   | 12.1     | 20.6 |
| <b>158572</b> | 2002 <i>JF</i> <sub>114</sub> |                 | 10 20.9  | 41°47'  | 13°5/4.8 | 18   | <b>168626</b> | 2000 <i>CE</i> <sub>55</sub>  |                 | 10 20.9  | 265°79' | 0°6/21.5 | 18   |
| 9 18          | 2 4.26                        | -28 33.1        | 1.912    | 2.734   | 14.5     | 18.9 | 9 18          | 2 6.92                        | +14 9.7         | 1.944    | 2.796   | 13.1     | 20.9 |
| 9 28          | 1 59.43                       | -30 32.6        | 1.908    | 2.748   | 13.7     | 18.9 | 9 28          | 2 1.60                        | +13 50.9        | 1.857    | 2.781   | 9.8      | 20.7 |
| 10 8          | 1 52.79                       | -32 5.9         | 1.925    | 2.763   | 13.6     | 18.9 | 10 8          | 1 54.28                       | +13 20.1        | 1.794    | 2.767   | 5.9      | 20.4 |
| 10 18         | 1 45.17                       | -33 5.6         | 1.963    | 2.778   | 14.1     | 19.0 | 10 18         | 1 45.62                       | +12 39.9        | 1.758    | 2.752   | 1.7      | 20.1 |
| 10 28         | 1 37.59                       | -33 28.0        | 2.022    | 2.794   | 15.1     | 19.1 | 10 28         | 1 36.56                       | +11 54.6        | 1.750    | 2.738   | 3.0      | 20.2 |
| 11 7          | 1 31.00                       | -33 13.9        | 2.098    | 2.809   | 16.3     | 19.2 | 11 7          | 1 28.16                       | +11 10.0        | 1.771    | 2.722   | 7.3      | 20.4 |
| 11 17         | 1 26.12                       | -32 27.0        | 2.190    | 2.825   | 17.5     | 19.4 | 11 17         | 1 21.32                       | +10 31.7        | 1.818    | 2.707   | 11.2     | 20.7 |
| 11 27         | 1 23.40                       | -31 12.8        | 2.295    | 2.842   | 18.5     | 19.5 | 11 27         | 1 16.72                       | +10 4.5         | 1.889    | 2.692   | 14.6     | 20.9 |
| <b>255325</b> | 2005 <i>WU</i> <sub>32</sub>  |                 | 10 20.9  | 247°16' | 1°2/22.2 | 17   | <b>228204</b> | 1993 <i>VM</i> <sub>7</sub>   |                 | 10 20.9  | 127°12' | 0°7/21.5 | 18   |
| 9 18          | 2 4.89                        | +16 34.5        | 2.534    | 3.369   | 11.0     | 21.1 | 9 18          | 2 9.01                        | +12 46.7        | 2.324    | 3.168   | 11.6     | 20.0 |
| 9 28          | 1 59.72                       | +16 13.9        | 2.440    | 3.354   | 8.2      | 20.9 | 9 28          | 2 2.70                        | +12 58.0        | 2.252    | 3.171   | 8.5      | 19.9 |
| 10 8          | 1 53.00                       | +15 42.1        | 2.372    | 3.339   | 5.1      | 20.7 | 10 8          | 1 54.72                       | +13 1.8         | 2.204    | 3.175   | 5.1      | 19.7 |
| 10 18         | 1 45.27                       | +15 1.0         | 2.332    | 3.324   | 1.9      | 20.5 | 10 18         | 1 45.69                       | +12 59.3        | 2.185    | 3.179   | 1.5      | 19.4 |
| 10 28         | 1 37.25                       | +14 14.0        | 2.322    | 3.308   | 2.4      | 20.5 | 10 28         | 1 36.45                       | +12 52.9        | 2.196    | 3.182   | 2.5      | 19.5 |
| 11 7          | 1 29.74                       | +13 25.6        | 2.341    | 3.292   | 5.7      | 20.7 | 11 7          | 1 27.87                       | +12 45.9        | 2.236    | 3.186   | 6.1      | 19.7 |
| 11 17         | 1 23.41                       | +12 40.4        | 2.389    | 3.276   | 8.9      | 20.9 | 11 17         | 1 20.68                       | +12 41.5        | 2.305    | 3.189   | 9.4      | 20.0 |
| 11 27         | 1 18.82                       | +12 2.8         | 2.461    | 3.259   | 11.8     | 21.0 | 11 27         | 1 15.44                       | +12 42.9        | 2.398    | 3.192   | 12.1     | 20.2 |
| <b>14956</b>  | 1996 <i>DB</i> <sub>1</sub>   |                 | 10 20.9  | 94°45'  | 3°3/23.3 | 18   | <b>516593</b> | 2007 <i>HA</i> <sub>36</sub>  |                 | 10 20.9  | 105°65' |          |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$       | $r$      | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------------|----------|---------|------|---------------|-------------------------------|-----------------|----------------|----------|---------|------|
| <b>517468</b> | 2014 <i>PG</i> <sub>26</sub>  |                 | 10 20.9 126°99 | 6°5/13.4 | 18      |      | <b>224712</b> | 2006 <i>BH</i> <sub>138</sub> |                 | 10 20.9 21°68  | 4°9/16.0 | 18      |      |
| 9 18          | 2 3.88                        | -9 16.7         | 2.392          | 3.260    | 10.4    | 21.4 | 9 18          | 2 2.23                        | -0 22.3         | 1.918          | 2.802    | 11.9    | 19.8 |
| 9 28          | 1 58.81                       | -10 34.5        | 2.349          | 3.268    | 8.3     | 21.3 | 9 28          | 1 57.94                       | -1 40.6         | 1.866          | 2.806    | 8.7     | 19.6 |
| 10 8          | 1 52.37                       | -11 45.5        | 2.331          | 3.276    | 6.8     | 21.2 | 10 8          | 1 52.01                       | -2 58.9         | 1.839          | 2.810    | 5.9     | 19.4 |
| 10 18         | 1 45.13                       | -12 43.7        | 2.341          | 3.284    | 6.7     | 21.2 | 10 18         | 1 45.10                       | -4 10.3         | 1.838          | 2.815    | 5.0     | 19.4 |
| 10 28         | 1 37.84                       | -13 24.0        | 2.379          | 3.291    | 8.1     | 21.3 | 10 28         | 1 38.07                       | -5 8.0          | 1.865          | 2.820    | 6.9     | 19.5 |
| 11 7          | 1 31.20                       | -13 43.9        | 2.442          | 3.298    | 10.1    | 21.5 | 11 7          | 1 31.79                       | -5 47.0         | 1.919          | 2.826    | 9.8     | 19.7 |
| 11 17         | 1 25.81                       | -13 42.7        | 2.529          | 3.305    | 12.2    | 21.6 | 11 17         | 1 26.96                       | -6 4.9          | 1.996          | 2.831    | 12.8    | 19.9 |
| 11 27         | 1 22.12                       | -13 21.7        | 2.636          | 3.312    | 14.0    | 21.8 | 11 27         | 1 24.07                       | -6 1.8          | 2.094          | 2.838    | 15.3    | 20.1 |
| <b>390063</b> | 2012 <i>UE</i> <sub>96</sub>  |                 | 10 20.9 93°21  | 0°6/21.5 | 18      |      | <b>260436</b> | 2004 <i>XJ</i> <sub>123</sub> |                 | 10 20.9 325°94 | 4°4/25.3 | 17      |      |
| 9 18          | 2 5.43                        | +16 25.8        | 1.669          | 2.525    | 14.7    | 21.3 | 9 18          | 2 3.96                        | +25 41.0        | 2.043          | 2.853    | 14.1    | 19.9 |
| 9 28          | 2 0.57                        | +15 28.0        | 1.603          | 2.530    | 10.9    | 21.1 | 9 28          | 1 59.47                       | +25 38.6        | 1.958          | 2.845    | 11.3    | 19.7 |
| 10 8          | 1 53.65                       | +14 13.1        | 1.561          | 2.534    | 6.5     | 20.9 | 10 8          | 1 53.06                       | +25 16.9        | 1.894          | 2.837    | 8.2     | 19.5 |
| 10 18         | 1 45.46                       | +12 45.9        | 1.544          | 2.539    | 1.8     | 20.6 | 10 18         | 1 45.38                       | +24 36.0        | 1.856          | 2.829    | 5.3     | 19.3 |
| 10 28         | 1 37.10                       | +11 14.0        | 1.556          | 2.543    | 3.2     | 20.7 | 10 28         | 1 37.37                       | +23 38.7        | 1.845          | 2.821    | 4.6     | 19.3 |
| 11 7          | 1 29.67                       | +9 46.4         | 1.595          | 2.547    | 7.8     | 21.0 | 11 7          | 1 30.05                       | +22 30.8        | 1.861          | 2.814    | 6.8     | 19.4 |
| 11 17         | 1 24.04                       | +8 31.0         | 1.660          | 2.552    | 11.9    | 21.3 | 11 17         | 1 24.27                       | +21 19.5        | 1.905          | 2.808    | 10.0    | 19.6 |
| 11 27         | 1 20.80                       | +7 33.4         | 1.748          | 2.556    | 15.4    | 21.5 | 11 27         | 1 20.67                       | +20 12.2        | 1.972          | 2.801    | 13.1    | 19.8 |
| <b>35628</b>  | 1998 <i>KQ</i> <sub>13</sub>  |                 | 10 20.9 232°94 | 1°2/19.8 | 18      |      | <b>111589</b> | 2002 <i>AX</i> <sub>55</sub>  |                 | 10 20.9 221°71 | 0°1/21.0 | 18      |      |
| 9 18          | 2 5.22                        | +8 54.6         | 2.297          | 3.157    | 11.1    | 19.8 | 9 18          | 2 5.16                        | +12 49.9        | 2.177          | 3.030    | 11.9    | 20.7 |
| 9 28          | 2 0.00                        | +8 21.3         | 2.219          | 3.150    | 8.0     | 19.6 | 9 28          | 2 0.04                        | +12 22.8        | 2.102          | 3.028    | 8.7     | 20.5 |
| 10 8          | 1 53.18                       | +7 41.2         | 2.165          | 3.142    | 4.6     | 19.4 | 10 8          | 1 53.25                       | +11 46.1        | 2.051          | 3.025    | 5.1     | 20.3 |
| 10 18         | 1 45.36                       | +6 57.9         | 2.140          | 3.134    | 1.4     | 19.1 | 10 18         | 1 45.42                       | +11 2.7         | 2.027          | 3.022    | 1.2     | 20.0 |
| 10 28         | 1 37.30                       | +6 15.8         | 2.144          | 3.126    | 3.3     | 19.3 | 10 28         | 1 37.37                       | +10 16.8        | 2.033          | 3.020    | 2.8     | 20.1 |
| 11 7          | 1 29.84                       | +5 39.6         | 2.177          | 3.118    | 6.9     | 19.5 | 11 7          | 1 29.96                       | +9 33.7         | 2.068          | 3.017    | 6.6     | 20.4 |
| 11 17         | 1 23.66                       | +5 12.9         | 2.238          | 3.109    | 10.2    | 19.7 | 11 17         | 1 23.94                       | +8 57.9         | 2.130          | 3.014    | 10.0    | 20.6 |
| 11 27         | 1 19.31                       | +4 58.7         | 2.321          | 3.100    | 13.0    | 19.8 | 11 27         | 1 19.85                       | +8 33.2         | 2.215          | 3.011    | 13.0    | 20.8 |
| <b>356540</b> | 2011 <i>SO</i> <sub>158</sub> |                 | 10 20.9 342°69 | 0°8/21.6 | 17      |      | <b>115274</b> | 2003 <i>SB</i> <sub>182</sub> |                 | 10 20.9 7°13   | 8°2/17.2 | 18      |      |
| 9 18          | 2 3.99                        | +15 33.4        | 1.579          | 2.442    | 15.0    | 20.9 | 9 18          | 2 10.11                       | -5 5.0          | 1.030          | 1.930    | 18.2    | 18.1 |
| 9 28          | 1 59.74                       | +15 0.5         | 1.507          | 2.437    | 11.2    | 20.6 | 9 28          | 2 4.82                        | -5 39.4         | 0.986          | 1.930    | 13.9    | 17.9 |
| 10 8          | 1 53.29                       | +14 11.6        | 1.458          | 2.432    | 6.7     | 20.4 | 10 8          | 1 56.45                       | -6 4.8          | 0.960          | 1.931    | 9.9     | 17.7 |
| 10 18         | 1 45.41                       | +13 10.2        | 1.433          | 2.427    | 2.0     | 20.0 | 10 18         | 1 46.18                       | -6 11.9         | 0.957          | 1.934    | 8.3     | 17.6 |
| 10 28         | 1 37.22                       | +12 2.8         | 1.435          | 2.423    | 3.3     | 20.1 | 10 28         | 1 35.71                       | -5 53.5         | 0.976          | 1.937    | 10.5    | 17.7 |
| 11 7          | 1 29.90                       | +10 57.4        | 1.464          | 2.420    | 8.0     | 20.4 | 11 7          | 1 26.74                       | -5 7.1          | 1.017          | 1.942    | 14.6    | 18.0 |
| 11 17         | 1 24.41                       | +10 1.6         | 1.518          | 2.417    | 12.4    | 20.7 | 11 17         | 1 20.51                       | -3 55.2         | 1.078          | 1.948    | 18.7    | 18.3 |
| 11 27         | 1 21.41                       | +9 21.1         | 1.594          | 2.414    | 16.1    | 20.9 | 11 27         | 1 17.69                       | -2 22.1         | 1.157          | 1.955    | 22.3    | 18.5 |
| <b>382019</b> | 2011 <i>BM</i> <sub>62</sub>  |                 | 10 20.9 186°60 | 1°9/19.4 | 18      |      | <b>452715</b> | 2005 <i>YN</i> <sub>159</sub> |                 | 10 20.9 313°53 | 3°8/24.8 | 18      |      |
| 9 18          | 2 8.94                        | +7 48.5         | 1.818          | 2.684    | 13.3    | 21.8 | 9 18          | 2 4.45                        | +24 16.6        | 2.105          | 2.919    | 13.6    | 21.5 |
| 9 28          | 2 2.99                        | +7 5.9          | 1.750          | 2.684    | 9.6     | 21.6 | 9 28          | 1 59.73                       | +24 6.9         | 2.022          | 2.914    | 10.8    | 21.3 |
| 10 8          | 1 55.02                       | +6 15.8         | 1.706          | 2.684    | 5.5     | 21.4 | 10 8          | 1 53.17                       | +23 39.1        | 1.962          | 2.909    | 7.6     | 21.1 |
| 10 18         | 1 45.80                       | +5 23.1         | 1.689          | 2.683    | 2.0     | 21.1 | 10 18         | 1 45.41                       | +22 53.8        | 1.927          | 2.905    | 4.7     | 20.9 |
| 10 28         | 1 36.35                       | +4 34.0         | 1.701          | 2.681    | 4.4     | 21.3 | 10 28         | 1 37.39                       | +21 54.3        | 1.920          | 2.900    | 4.0     | 20.9 |
| 11 7          | 1 27.74                       | +3 54.3         | 1.741          | 2.679    | 8.5     | 21.5 | 11 7          | 1 30.04                       | +20 46.4        | 1.942          | 2.896    | 6.5     | 21.0 |
| 11 17         | 1 20.84                       | +3 28.4         | 1.807          | 2.677    | 12.3    | 21.8 | 11 17         | 1 24.20                       | +19 37.0        | 1.990          | 2.892    | 9.7     | 21.2 |
| 11 27         | 1 16.27                       | +3 19.0         | 1.894          | 2.674    | 15.5    | 22.0 | 11 27         | 1 20.45                       | +18 33.0        | 2.063          | 2.887    | 12.8    | 21.4 |
| <b>487859</b> | 2015 <i>TT</i> <sub>110</sub> |                 | 10 20.9 314°52 | 0°4/20.6 | 18      |      | <b>263246</b> | 2008 <i>AV</i> <sub>113</sub> |                 | 10 20.9 255°42 | 3°6/18.7 | 18      |      |
| 9 18          | 2 2.05                        | +13 30.7        | 2.023          | 2.883    | 12.3    | 20.6 | 9 18          | 2 11.82                       | +3 15.0         | 1.553          | 2.428    | 14.6    | 20.8 |
| 9 28          | 1 57.91                       | +12 30.5        | 1.944          | 2.874    | 9.0     | 20.3 | 9 28          | 2 5.56                        | +2 45.4         | 1.477          | 2.414    | 10.8    | 20.5 |
| 10 8          | 1 52.05                       | +11 17.4        | 1.890          | 2.866    | 5.2     | 20.1 | 10 8          | 1 56.78                       | +2 12.5         | 1.424          | 2.400    | 6.5     | 20.3 |
| 10 18         | 1 45.12                       | +9 55.9         | 1.863          | 2.858    | 1.1     | 19.8 | 10 18         | 1 46.29                       | +1 41.8         | 1.396          | 2.386    | 3.6     | 20.1 |
| 10 28         | 1 37.95                       | +8 32.5         | 1.865          | 2.850    | 3.1     | 19.9 | 10 28         | 1 35.32                       | +1 19.6         | 1.397          | 2.371    | 6.0     | 20.2 |
| 11 7          | 1 31.43                       | +7 14.4         | 1.895          | 2.843    | 7.2     | 20.2 | 11 7          | 1 25.23                       | +1 11.4         | 1.423          | 2.357    | 10.5    | 20.4 |
| 11 17         | 1 26.32                       | +6 7.6          | 1.952          | 2.835    | 10.9    | 20.4 | 11 17         | 1 17.14                       | +1 20.4         | 1.474          | 2.341    | 14.7    | 20.6 |
| 11 27         | 1 23.16                       | +5 16.9         | 2.032          | 2.828    | 14.0    | 20.6 | 11 27         | 1 11.84                       | +1 47.7         | 1.546          | 2.326    | 18.3    | 20.8 |
| <b>315260</b> | 2007 <i>TN</i> <sub>27</sub>  |                 | 10 20.9 226°12 | 0°7/21.4 | 17      |      | <b>381093</b> | 2007 <i>BB</i> <sub>79</sub>  |                 | 10 20.9 275°28 | 0°5/21.3 | 18      |      |
| 9 18          | 2 12.78                       | +12 58.4        | 1.446          | 2.307    | 16.3    | 21.2 | 9 18          | 2 7.88                        | +14 8.4         | 1.571          | 2.433    | 15.2    | 21.8 |
| 9 28          | 2 6.41                        | +13 0.3         | 1.374          | 2.303    | 12.1    | 20.9 | 9 28          | 2 2.74                        | +13 43.8        | 1.490          | 2.419    | 11.3    | 21.5 |
| 10 8          | 1 57.31                       | +12 49.8        | 1.324          | 2.298    | 7.3     | 20.6 | 10 8          | 1 55.16                       | +13 4.5         | 1.430          | 2.405    | 6.8     | 21.2 |
| 10 18         | 1 46.38                       | +12 29.1        | 1.299          | 2.293    | 2.0     | 20.3 | 10 18         | 1 45.92                       | +12 13.4        | 1.396          | 2.391    | 1.8     | 20.8 |
| 10 28         | 1 34.98                       | +12 2.7         | 1.301          | 2.288    | 3.7     | 20.4 | 10 28         | 1 36.19                       | +11 16.4        | 1.389          | 2.376    | 3.5     | 20.9 |
| 11 7          | 1 24.62                       | +11 37.0        | 1.330          | 2.283    | 9.0     | 20.7 | 11 7          | 1 27.27                       | +10 21.3        | 1.409          | 2.362    | 8.6     | 21.2 |
| 11 17         | 1 16.49                       | +11 18.0        | 1.384          | 2.277    | 13.7    | 21.0 | 11 17         | 1 20.28                       | +9 35.3         | 1.454          | 2.347    | 13.1    | 21.4 |
| 11 27         | 1 11.42                       | +11 10.9        | 1.458          | 2.272    | 17.7    | 21.2 | 11 27         | 1 15.99                       | +9 4.2          | 1.520          | 2.333    | 17.1    | 21.7 |
| <b>66488</b>  | 1999 <i>RD</i> <sub>44</sub>  |                 | 10 20.9 169°11 | 4°9/24.4 | 18      |      | <b>55897</b>  | 1998 <i>AH</i> <sub>6</sub>   |                 | 10 20.9 157°00 | 0°3/21.2 | 18      |      |
| 9 18          | 2 12.70                       | +23 17.0        | 1.856          | 2.668    | 15.3    | 18.7 | 9 18          | 2 5.78                        | +13 23.7        | 2.188          | 3.038    | 11.9    | 18.3 |
| 9 28          | 2 6.02                        | +23 58.9        | 1.779          | 2.669    | 12.1    | 18.5 | 9 28          | 2 0.45                        | +13 0.2         | 2.116          | 3.041    | 8.8     | 18.1 |
| 10 8          | 1 56.96                       | +24 24.1        | 1.725          | 2.670    | 8.7     | 18.3 | 10 8          | 1 53.48                       | +12 26.9        | 2.069          | 3.043    | 5.2     | 17.9 |
| 10 18         | 1 46.29                       | +24 30.8        | 1.697          | 2.671    | 5.7     | 18.1 | 10 18         | 1 45.48                       | +11 46.6        | 2.050          | 3.045    | 1.3     | 17.7 |
| 10 28         | 1 35.19                       | +24 20.0        | 1.696          | 2.671    | 5.1     | 18.1 | 10 28         | 1 37.29                       | +11 3.4         | 2.060          | 3.047    | 2.7     | 17.8 |
| 11 7          | 1 24.92                       | +23 55.9        | 1.724          | 2.672    | 7.7     | 18.3 | 11 7          | 1 29.79                       | +10 22.3        | 2.099          | 3.048    | 6.4     | 18.0 |
| 11 17         | 1 16.57                       | +23 24.9        | 1.778          | 2.672    | 11.1    | 18.5 | 11 17         | 1 23.68                       | +9 47.8         | 2.165          | 3.050    | 9.8     | 18.2 |
| 11 27         | 1 10.87                       | +22 54.1        | 1.855          | 2.672    | 14.3    | 18.7 | 11 27         | 1 19.51                       | +9 23.6         | 2.255          | 3.051    | 12.7    | 18.4 |
| <b>513249</b> | 2006 <i>DG</i> <sub>124</sub> |                 | 10 20.9 203°03 | 3°2/23.6 | 18      |      | <b>40</b>     |                               |                 |                |          |         |      |

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| 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$         | $\beta$ | $V$  | 2020          | $\alpha_{2000}$               | $\delta_{2000}$ | $\Delta$ | $r$         | $\beta$ | $V$  |
|---------------|-------------------------------|-----------------|----------|-------------|---------|------|---------------|-------------------------------|-----------------|----------|-------------|---------|------|
| <b>384613</b> | 2011 <i>BB</i> <sub>101</sub> | 10 20.9 258°82  |          | 4°0/18.3 18 |         |      | <b>209674</b> | 2005 <i>CF</i> <sub>67</sub>  | 10 20.9 263°73  |          | 4°2/24.0 18 |         |      |
| 9 18          | 2 9.96                        | + 2 42.6        | 1.476    | 2.357       | 14.9    | 21.1 | 9 18          | 2 10.55                       | +22 4.7         | 1.915    | 2.734       | 14.6    | 20.6 |
| 9 28          | 2 4.13                        | + 2 3.1         | 1.413    | 2.353       | 10.9    | 20.9 | 9 28          | 2 4.52                        | +22 32.2        | 1.825    | 2.722       | 11.5    | 20.4 |
| 10 8          | 1 55.87                       | + 1 20.9        | 1.373    | 2.350       | 6.7     | 20.6 | 10 8          | 1 56.17                       | +22 43.9        | 1.759    | 2.709       | 8.1     | 20.2 |
| 10 18         | 1 46.06                       | + 0 42.2        | 1.358    | 2.346       | 4.0     | 20.5 | 10 18         | 1 46.20                       | +22 38.9        | 1.717    | 2.696       | 4.9     | 19.9 |
| 10 28         | 1 35.95                       | + 0 14.1        | 1.370    | 2.342       | 6.5     | 20.6 | 10 28         | 1 35.71                       | +22 18.3        | 1.704    | 2.683       | 4.5     | 19.9 |
| 11 7          | 1 26.86                       | + 0 2.0         | 1.407    | 2.339       | 10.7    | 20.9 | 11 7          | 1 25.88                       | +21 46.6        | 1.719    | 2.670       | 7.4     | 20.0 |
| 11 17         | 1 19.82                       | + 0 8.7         | 1.469    | 2.335       | 14.8    | 21.1 | 11 17         | 1 17.79                       | +21 10.0        | 1.760    | 2.657       | 11.1    | 20.2 |
| 11 27         | 1 15.54                       | + 0 35.0        | 1.550    | 2.331       | 18.2    | 21.3 | 11 27         | 1 12.22                       | +20 35.5        | 1.825    | 2.643       | 14.4    | 20.4 |
| <b>264846</b> | 2002 <i>QW</i> <sub>107</sub> | 10 20.9 339°65  |          | 4°9/25.9 17 |         |      | <b>490980</b> | 2011 <i>EW</i> <sub>83</sub>  | 10 20.9 274°63  |          | 0°7/21.7 17 |         |      |
| 9 18          | 2 5.75                        | +27 9.0         | 2.239    | 3.034       | 13.6    | 20.4 | 9 18          | 2 4.56                        | +14 27.7        | 2.439    | 3.284       | 11.0    | 21.8 |
| 9 28          | 2 0.66                        | +27 25.4        | 2.157    | 3.031       | 11.0    | 20.3 | 9 28          | 1 59.58                       | +14 12.0        | 2.349    | 3.269       | 8.2     | 21.6 |
| 10 8          | 1 53.71                       | +27 24.2        | 2.097    | 3.029       | 8.2     | 20.1 | 10 8          | 1 53.03                       | +13 46.8        | 2.283    | 3.253       | 5.0     | 21.4 |
| 10 18         | 1 45.55                       | +27 4.6         | 2.062    | 3.027       | 5.8     | 19.9 | 10 18         | 1 45.44                       | +13 13.8        | 2.244    | 3.238       | 1.5     | 21.1 |
| 10 28         | 1 37.09                       | +26 28.4        | 2.055    | 3.024       | 5.0     | 19.9 | 10 28         | 1 37.55                       | +12 36.5        | 2.236    | 3.223       | 2.4     | 21.2 |
| 11 7          | 1 29.29                       | +25 39.9        | 2.076    | 3.023       | 6.7     | 20.0 | 11 7          | 1 30.16                       | +11 59.0        | 2.256    | 3.207       | 6.0     | 21.4 |
| 11 17         | 1 22.96                       | +24 45.2        | 2.123    | 3.021       | 9.4     | 20.2 | 11 17         | 1 23.98                       | +11 25.8        | 2.304    | 3.191       | 9.2     | 21.5 |
| 11 27         | 1 18.73                       | +23 50.8        | 2.196    | 3.019       | 12.1    | 20.3 | 11 27         | 1 19.56                       | +11 0.7         | 2.377    | 3.176       | 12.1    | 21.7 |
| <b>173757</b> | 2001 <i>RE</i> <sub>104</sub> | 10 20.9 276°97  |          | 3°6/17.4 18 |         |      | <b>429818</b> | 2012 <i>KN</i> <sub>43</sub>  | 10 20.9 87°99   |          | 1°9/19.6 16 |         |      |
| 9 18          | 2 3.96                        | + 3 43.4        | 1.927    | 2.805       | 12.1    | 19.9 | 9 18          | 2 10.47                       | + 8 27.2        | 1.495    | 2.367       | 15.2    | 22.0 |
| 9 28          | 1 59.35                       | + 2 31.7        | 1.854    | 2.794       | 8.8     | 19.7 | 9 28          | 2 4.21                        | + 7 41.6        | 1.450    | 2.387       | 11.0    | 21.8 |
| 10 8          | 1 52.94                       | + 1 14.9        | 1.806    | 2.783       | 5.4     | 19.4 | 10 8          | 1 55.74                       | + 6 47.9        | 1.429    | 2.407       | 6.2     | 21.6 |
| 10 18         | 1 45.37                       | - 0 0.6         | 1.786    | 2.772       | 3.6     | 19.3 | 10 18         | 1 46.04                       | + 5 52.1        | 1.433    | 2.427       | 2.1     | 21.4 |
| 10 28         | 1 37.54                       | - 1 7.5         | 1.793    | 2.761       | 5.8     | 19.4 | 10 28         | 1 36.34                       | + 5 1.2         | 1.465    | 2.446       | 4.7     | 21.6 |
| 11 7          | 1 30.39                       | - 1 59.6        | 1.828    | 2.750       | 9.3     | 19.6 | 11 7          | 1 27.85                       | + 4 21.9        | 1.523    | 2.465       | 9.1     | 21.9 |
| 11 17         | 1 24.70                       | - 2 32.8        | 1.888    | 2.739       | 12.7    | 19.8 | 11 17         | 1 21.45                       | + 3 58.4        | 1.606    | 2.484       | 13.1    | 22.2 |
| 11 27         | 1 21.08                       | - 2 45.4        | 1.968    | 2.728       | 15.6    | 20.0 | 11 27         | 1 17.67                       | + 3 52.7        | 1.711    | 2.502       | 16.4    | 22.4 |
| <b>296589</b> | 2009 <i>RN</i> <sub>31</sub>  | 10 20.9 62°96   |          | 0°5/20.5 18 |         |      | <b>188587</b> | 2005 <i>NP</i> <sub>22</sub>  | 10 20.9 137°51  |          | 1°7/22.3 18 |         |      |
| 9 18          | 2 3.18                        | +12 54.9        | 2.059    | 2.919       | 12.2    | 19.6 | 9 18          | 2 9.55                        | +17 21.3        | 1.643    | 2.490       | 15.4    | 20.5 |
| 9 28          | 1 58.55                       | +11 57.2        | 2.001    | 2.931       | 8.8     | 19.4 | 9 28          | 2 3.69                        | +16 59.3        | 1.577    | 2.497       | 11.5    | 20.3 |
| 10 8          | 1 52.34                       | +10 48.9        | 1.967    | 2.944       | 5.1     | 19.2 | 10 8          | 1 55.56                       | +16 20.8        | 1.534    | 2.503       | 7.2     | 20.0 |
| 10 18         | 1 45.21                       | + 9 34.6        | 1.961    | 2.957       | 1.1     | 19.0 | 10 18         | 1 46.03                       | +15 28.6        | 1.517    | 2.509       | 2.7     | 19.8 |
| 10 28         | 1 38.00                       | + 8 20.5        | 1.984    | 2.969       | 3.1     | 19.2 | 10 28         | 1 36.29                       | +14 28.1        | 1.527    | 2.515       | 3.3     | 19.8 |
| 11 7          | 1 31.55                       | + 7 12.7        | 2.036    | 2.982       | 6.8     | 19.4 | 11 7          | 1 27.54                       | +13 27.0        | 1.565    | 2.520       | 7.7     | 20.1 |
| 11 17         | 1 26.52                       | + 6 16.6        | 2.115    | 2.995       | 10.2    | 19.7 | 11 17         | 1 20.75                       | +12 32.5        | 1.629    | 2.525       | 11.9    | 20.4 |
| 11 27         | 1 23.39                       | + 5 35.5        | 2.216    | 3.009       | 13.1    | 19.9 | 11 27         | 1 16.57                       | +11 50.5        | 1.716    | 2.529       | 15.4    | 20.6 |
| <b>523276</b> | 2017 <i>BE</i> <sub>8</sub>   | 10 20.9 219°33  |          | 6°7/12.9 18 |         |      | <b>221795</b> | 2008 <i>BM</i> <sub>36</sub>  | 10 20.9 104°69  |          | 4°4/17.4 18 |         |      |
| 9 18          | 2 4.42                        | -11 59.1        | 2.628    | 3.487       | 9.9     | 21.5 | 9 18          | 2 8.58                        | + 3 10.6        | 1.545    | 2.426       | 14.4    | 20.1 |
| 9 28          | 1 59.23                       | -13 5.2         | 2.571    | 3.481       | 8.1     | 21.3 | 9 28          | 2 2.80                        | + 1 49.6        | 1.500    | 2.441       | 10.4    | 19.9 |
| 10 8          | 1 52.67                       | -14 3.7         | 2.540    | 3.474       | 6.9     | 21.2 | 10 8          | 1 54.93                       | + 0 25.3        | 1.479    | 2.455       | 6.4     | 19.7 |
| 10 18         | 1 45.31                       | -14 49.2        | 2.536    | 3.467       | 6.9     | 21.2 | 10 18         | 1 45.86                       | - 0 53.9        | 1.484    | 2.470       | 4.4     | 19.6 |
| 10 28         | 1 37.80                       | -15 17.4        | 2.560    | 3.460       | 8.1     | 21.3 | 10 28         | 1 36.77                       | - 1 59.6        | 1.517    | 2.484       | 6.8     | 19.8 |
| 11 7          | 1 30.85                       | -15 25.8        | 2.609    | 3.452       | 10.0    | 21.4 | 11 7          | 1 28.77                       | - 2 45.3        | 1.576    | 2.497       | 10.6    | 20.0 |
| 11 17         | 1 25.05                       | -15 13.9        | 2.683    | 3.444       | 11.9    | 21.5 | 11 17         | 1 22.73                       | - 3 8.3         | 1.659    | 2.511       | 14.1    | 20.3 |
| 11 27         | 1 20.85                       | -14 43.1        | 2.775    | 3.436       | 13.6    | 21.7 | 11 27         | 1 19.17                       | - 3 8.2         | 1.761    | 2.523       | 17.1    | 20.5 |
| <b>226476</b> | 2003 <i>SL</i> <sub>179</sub> | 10 20.9 355°60  |          | 3°3/18.2 18 |         |      | <b>496771</b> | 2017 <i>BD</i> <sub>108</sub> | 10 20.9 326°47  |          | 4°9/16.0 18 |         |      |
| 9 18          | 2 4.51                        | + 2 53.2        | 1.885    | 2.764       | 12.3    | 19.9 | 9 18          | 2 3.54                        | - 2 52.4        | 2.228    | 3.103       | 10.8    | 20.5 |
| 9 28          | 1 59.72                       | + 2 18.6        | 1.822    | 2.761       | 8.9     | 19.7 | 9 28          | 1 58.78                       | - 3 48.3        | 2.167    | 3.100       | 8.1     | 20.3 |
| 10 8          | 1 53.14                       | + 1 41.9        | 1.782    | 2.759       | 5.4     | 19.5 | 10 8          | 1 52.51                       | - 4 42.2        | 2.131    | 3.097       | 5.7     | 20.2 |
| 10 18         | 1 45.44                       | + 1 8.0         | 1.769    | 2.758       | 3.3     | 19.4 | 10 18         | 1 45.31                       | - 5 28.7        | 2.123    | 3.094       | 4.9     | 20.1 |
| 10 28         | 1 37.55                       | + 0 42.1        | 1.784    | 2.757       | 5.3     | 19.5 | 10 28         | 1 37.96                       | - 6 2.6         | 2.142    | 3.092       | 6.5     | 20.2 |
| 11 7          | 1 30.39                       | + 0 28.5        | 1.826    | 2.756       | 8.7     | 19.7 | 11 7          | 1 31.24                       | - 6 20.2        | 2.189    | 3.089       | 9.1     | 20.4 |
| 11 17         | 1 24.77                       | + 0 29.8        | 1.893    | 2.756       | 12.1    | 19.9 | 11 17         | 1 25.81                       | - 6 20.1        | 2.260    | 3.087       | 11.8    | 20.5 |
| 11 27         | 1 21.22                       | + 0 46.9        | 1.981    | 2.757       | 15.0    | 20.1 | 11 27         | 1 22.16                       | - 6 2.1         | 2.353    | 3.084       | 14.1    | 20.7 |
| <b>75550</b>  | 1999 <i>YT</i> <sub>1</sub>   | 10 20.9 213°48  |          | 3°8/25.3 18 |         |      | <b>250485</b> | 2004 <i>EW</i> <sub>32</sub>  | 10 20.9 253°29  |          | 5°1/25.9 18 |         |      |
| 9 18          | 2 7.26                        | +26 15.9        | 2.476    | 3.267       | 12.5    | 20.1 | 9 18          | 2 7.19                        | +27 49.0        | 2.154    | 2.945       | 14.1    | 20.8 |
| 9 28          | 2 1.58                        | +26 0.3         | 2.383    | 3.259       | 10.0    | 19.9 | 9 28          | 2 1.87                        | +27 53.6        | 2.061    | 2.933       | 11.5    | 20.6 |
| 10 8          | 1 54.19                       | +25 27.1        | 2.313    | 3.250       | 7.2     | 19.7 | 10 8          | 1 54.52                       | +27 38.4        | 1.989    | 2.921       | 8.6     | 20.4 |
| 10 18         | 1 45.70                       | +24 36.6        | 2.269    | 3.241       | 4.7     | 19.5 | 10 18         | 1 45.82                       | +27 2.6         | 1.943    | 2.908       | 6.0     | 20.2 |
| 10 28         | 1 36.93                       | +23 31.5        | 2.255    | 3.231       | 4.0     | 19.5 | 10 28         | 1 36.72                       | +26 8.2         | 1.925    | 2.895       | 5.2     | 20.2 |
| 11 7          | 1 28.77                       | +22 17.1        | 2.271    | 3.220       | 6.0     | 19.6 | 11 7          | 1 28.27                       | +25 0.4         | 1.935    | 2.883       | 7.0     | 20.3 |
| 11 17         | 1 21.98                       | +20 59.6        | 2.315    | 3.209       | 8.9     | 19.8 | 11 17         | 1 21.39                       | +23 46.3        | 1.972    | 2.869       | 10.0    | 20.4 |
| 11 27         | 1 17.12                       | +19 45.9        | 2.385    | 3.197       | 11.6    | 19.9 | 11 27         | 1 16.75                       | +22 33.7        | 2.033    | 2.856       | 13.0    | 20.6 |
| <b>220865</b> | 2004 <i>VR</i> <sub>96</sub>  | 10 20.9 16°11   |          | 0°3/21.2 18 |         |      | <b>394970</b> | 2008 <i>YG</i> <sub>167</sub> | 10 20.9 293°08  |          | 2°8/18.9 18 |         |      |
| 9 18          | 2 4.53                        | +13 22.8        | 2.090    | 2.945       | 12.2    | 21.0 | 9 18          | 2 6.71                        | + 5 55.6        | 1.645    | 2.523       | 13.8    | 21.2 |
| 9 28          | 1 59.64                       | +12 59.6        | 2.019    | 2.946       | 9.0     | 20.8 | 9 28          | 2 1.76                        | + 5 13.8        | 1.565    | 2.505       | 10.1    | 20.9 |
| 10 8          | 1 53.06                       | +12 26.4        | 1.973    | 2.947       | 5.3     | 20.6 | 10 8          | 1 54.57                       | + 4 25.1        | 1.508    | 2.487       | 5.9     | 20.6 |
| 10 18         | 1 45.43                       | +11 45.8        | 1.953    | 2.948       | 1.3     | 20.3 | 10 18         | 1 45.84                       | + 3 34.8        | 1.477    | 2.469       | 2.8     | 20.4 |
| 10 28         | 1 37.60                       | +11 2.4         | 1.963    | 2.950       | 2.7     | 20.4 | 10 28         | 1 36.67                       | + 2 49.9        | 1.473    | 2.451       | 5.3     | 20.5 |
| 11 7          | 1 30.45                       | +10 21.3        | 2.001    | 2.951       | 6.6     | 20.7 | 11 7          | 1 28.24                       | + 2 16.8        | 1.495    | 2.433       | 9.7     | 20.7 |
| 11 17         | 1 24.73                       | + 9 47.1        | 2.065    | 2.953       | 10.1    | 20.9 | 11 17         | 1 21.55                       | + 2 0.2         | 1.542    | 2.415       | 13.8    | 20.9 |
| 11 27         | 1 20.98                       | + 9 23.6        | 2.153    | 2.955       | 13.1    | 21.1 | 11 27         | 1 17.37                       | + 2 2.6         | 1.609    | 2.398       | 17.4    | 21.1 |
| <b>425270</b> | 2009 <i>WX</i> <sub>127</sub> | 10 20.9 125°11  |          | 1°7/19.6 17 |         |      | <b>147485</b> | 2004 <i>CU</i> <sub>54</sub>  | 10 20.9 159°86  |          | 0°8/21.6 18 |         |      |
| 9 18          | 2 9.18                        | + 8             |          |             |         |      |               |                               |                 |          |             |         |      |

EPHEMERIDES

10 20.9

10 21.0

| 2020          | $\alpha_{2000}$               | $\delta_{2000}$              | $\Delta$ | $r$   | $\beta$ | $V$  | 2020          | $\alpha_{2000}$              | $\delta_{2000}$              | $\Delta$ | $r$   | $\beta$ | $V$  |
|---------------|-------------------------------|------------------------------|----------|-------|---------|------|---------------|------------------------------|------------------------------|----------|-------|---------|------|
| <b>378147</b> | 2006 <i>VW</i> <sub>90</sub>  | 10 20.9 252°76' 1.6°/22.2 18 |          |       |         |      | <b>64112</b>  | 2001 <i>TF</i> <sub>10</sub> | 10 20.9 329°34' 0.5°/21.3 18 |          |       |         |      |
| 9 18          | 2 10.10                       | +16 16.5                     | 1.656    | 2.506 | 15.2    | 21.8 | 9 18          | 2 5.46                       | +13 26.9                     | 1.271    | 2.150 | 17.0    | 19.3 |
| 9 28          | 2 4.34                        | +16 8.5                      | 1.572    | 2.493 | 11.5    | 21.6 | 9 28          | 2 1.42                       | +13 11.2                     | 1.198    | 2.136 | 12.6    | 19.0 |
| 10 8          | 1 56.13                       | +15 45.5                     | 1.510    | 2.479 | 7.2     | 21.3 | 10 8          | 1 54.62                      | +12 39.9                     | 1.145    | 2.122 | 7.6     | 18.7 |
| 10 18         | 1 46.22                       | +15 8.9                      | 1.473    | 2.465 | 2.6     | 21.0 | 10 18         | 1 45.91                      | +11 56.2                     | 1.115    | 2.110 | 2.0     | 18.3 |
| 10 28         | 1 35.80                       | +14 23.2                     | 1.464    | 2.451 | 3.4     | 21.0 | 10 28         | 1 36.64                      | +11 6.8                      | 1.110    | 2.098 | 3.9     | 18.4 |
| 11 7          | 1 26.17                       | +13 35.0                     | 1.483    | 2.437 | 8.1     | 21.3 | 11 7          | 1 28.33                      | +10 20.1                     | 1.129    | 2.086 | 9.6     | 18.7 |
| 11 17         | 1 18.45                       | +12 51.4                     | 1.527    | 2.422 | 12.5    | 21.5 | 11 17         | 1 22.24                      | +9 44.1                      | 1.172    | 2.076 | 14.7    | 19.0 |
| 11 27         | 1 13.43                       | +12 18.9                     | 1.593    | 2.407 | 16.4    | 21.7 | 11 27         | 1 19.23                      | +9 24.8                      | 1.233    | 2.067 | 19.0    | 19.2 |
| <b>473283</b> | 2015 <i>OO</i> <sub>19</sub>  | 10 20.9 60°15' 2.1°/19.1 18  |          |       |         |      | <b>403407</b> | 2009 <i>SQ</i> <sub>14</sub> | 10 20.9 58°00' 3.3°/24.1 18  |          |       |         |      |
| 9 18          | 2 5.46                        | +9 21.5                      | 1.635    | 2.510 | 14.0    | 20.9 | 9 18          | 2 6.54                       | +21 53.8                     | 2.108    | 2.929 | 13.4    | 21.1 |
| 9 28          | 2 0.40                        | +8 5.7                       | 1.594    | 2.533 | 10.0    | 20.7 | 9 28          | 2 1.19                       | +21 59.3                     | 2.037    | 2.935 | 10.4    | 20.9 |
| 10 8          | 1 53.48                       | +6 41.2                      | 1.576    | 2.556 | 5.7     | 20.5 | 10 8          | 1 54.02                      | +21 49.4                     | 1.989    | 2.942 | 7.1     | 20.8 |
| 10 18         | 1 45.52                       | +5 15.1                      | 1.586    | 2.579 | 2.1     | 20.3 | 10 18         | 1 45.71                      | +21 24.7                     | 1.967    | 2.948 | 4.1     | 20.6 |
| 10 28         | 1 37.60                       | +3 55.7                      | 1.623    | 2.603 | 4.6     | 20.5 | 10 28         | 1 37.18                      | +20 48.0                     | 1.974    | 2.955 | 3.7     | 20.6 |
| 11 7          | 1 30.72                       | +2 50.0                      | 1.687    | 2.626 | 8.7     | 20.8 | 11 7          | 1 29.40                      | +20 4.3                      | 2.008    | 2.962 | 6.4     | 20.8 |
| 11 17         | 1 25.61                       | +2 2.8                       | 1.777    | 2.649 | 12.3    | 21.1 | 11 17         | 1 23.15                      | +19 19.4                     | 2.070    | 2.969 | 9.6     | 21.0 |
| 11 27         | 1 22.75                       | +1 36.1                      | 1.888    | 2.673 | 15.3    | 21.4 | 11 27         | 1 19.00                      | +18 38.8                     | 2.156    | 2.975 | 12.5    | 21.2 |
| <b>164709</b> | 1998 <i>FC</i> <sub>10</sub>  | 10 20.9 144°76' 1.0°/21.9 18 |          |       |         |      | <b>207885</b> | 2007 <i>WH</i> <sub>51</sub> | 10 21.0 114°26' 1.7°/19.4 18 |          |       |         |      |
| 9 18          | 2 8.07                        | +15 56.3                     | 1.993    | 2.837 | 13.2    | 21.1 | 9 18          | 2 7.29                       | +7 46.9                      | 2.043    | 2.907 | 12.1    | 21.0 |
| 9 28          | 2 2.25                        | +15 28.2                     | 1.926    | 2.844 | 9.8     | 20.9 | 9 28          | 2 1.54                       | +7 6.0                       | 1.987    | 2.920 | 8.7     | 20.8 |
| 10 8          | 1 54.59                       | +14 47.2                     | 1.882    | 2.852 | 5.9     | 20.7 | 10 8          | 1 54.11                      | +6 19.3                      | 1.956    | 2.933 | 5.0     | 20.6 |
| 10 18         | 1 45.81                       | +13 56.0                     | 1.866    | 2.859 | 1.9     | 20.5 | 10 18         | 1 45.72                      | +5 31.0                      | 1.953    | 2.946 | 1.8     | 20.4 |
| 10 28         | 1 36.87                       | +12 59.7                     | 1.878    | 2.866 | 2.8     | 20.5 | 10 28         | 1 37.25                      | +4 46.4                      | 1.979    | 2.959 | 3.9     | 20.6 |
| 11 7          | 1 28.74                       | +12 4.2                      | 1.920    | 2.872 | 6.8     | 20.8 | 11 7          | 1 29.58                      | +4 10.3                      | 2.033    | 2.971 | 7.5     | 20.8 |
| 11 17         | 1 22.22                       | +11 15.2                     | 1.989    | 2.877 | 10.4    | 21.1 | 11 17         | 1 23.44                      | +3 46.3                      | 2.114    | 2.983 | 10.8    | 21.1 |
| 11 27         | 1 17.87                       | +10 37.5                     | 2.081    | 2.883 | 13.5    | 21.3 | 11 27         | 1 19.31                      | +3 36.5                      | 2.218    | 2.994 | 13.6    | 21.3 |
| <b>52926</b>  | 1998 <i>SY</i> <sub>117</sub> | 10 20.9 312°82' 1.6°/22.0 18 |          |       |         |      | <b>215595</b> | 2003 <i>QZ</i> <sub>35</sub> | 10 21.0 4°99' 4.9°/17.5 18   |          |       |         |      |
| 9 18          | 2 6.43                        | +15 47.6                     | 1.308    | 2.178 | 17.1    | 18.7 | 9 18          | 2 3.76                       | +5 15.1                      | 1.071    | 1.975 | 17.4    | 19.1 |
| 9 28          | 2 2.25                        | +15 41.0                     | 1.224    | 2.156 | 13.0    | 18.4 | 9 28          | 2 0.18                       | +3 44.4                      | 1.021    | 1.974 | 12.6    | 18.9 |
| 10 8          | 1 55.20                       | +15 16.7                     | 1.160    | 2.134 | 8.1     | 18.0 | 10 8          | 1 53.81                      | +2 4.4                       | 0.992    | 1.974 | 7.6     | 18.6 |
| 10 18         | 1 46.06                       | +14 36.3                     | 1.119    | 2.112 | 2.9     | 17.7 | 10 18         | 1 45.69                      | +0 26.6                      | 0.986    | 1.975 | 4.9     | 18.5 |
| 10 28         | 1 36.17                       | +13 45.1                     | 1.103    | 2.092 | 3.9     | 17.7 | 10 28         | 1 37.33                      | -0 56.0                      | 1.003    | 1.977 | 8.1     | 18.7 |
| 11 7          | 1 27.12                       | +12 51.7                     | 1.113    | 2.071 | 9.5     | 17.9 | 11 7          | 1 30.23                      | -1 53.0                      | 1.044    | 1.980 | 13.0    | 18.9 |
| 11 17         | 1 20.28                       | +12 5.0                      | 1.145    | 2.052 | 14.8    | 18.2 | 11 17         | 1 25.52                      | -2 19.6                      | 1.104    | 1.984 | 17.6    | 19.2 |
| 11 27         | 1 16.62                       | +11 32.9                     | 1.197    | 2.033 | 19.3    | 18.4 | 11 27         | 1 23.88                      | -2 15.4                      | 1.182    | 1.988 | 21.4    | 19.5 |
| <b>13704</b>  | <i>Aletesi</i>                | 10 20.9 318°68' 1.5°/22.4 18 |          |       |         |      | <b>51726</b>  | 2001 <i>KV</i> <sub>40</sub> | 10 21.0 19°22' 7.7°/14.7 18  |          |       |         |      |
| 9 18          | 2 3.36                        | +17 38.1                     | 1.965    | 2.812 | 13.2    | 18.2 | 9 18          | 2 0.12                       | -1 5.1                       | 1.134    | 2.044 | 16.1    | 17.2 |
| 9 28          | 1 59.03                       | +17 11.1                     | 1.882    | 2.801 | 10.0    | 18.0 | 9 28          | 1 57.18                      | -3 8.0                       | 1.104    | 2.056 | 12.0    | 17.0 |
| 10 8          | 1 52.84                       | +16 29.2                     | 1.822    | 2.791 | 6.3     | 17.7 | 10 8          | 1 51.87                      | -5 8.1                       | 1.096    | 2.069 | 8.6     | 16.9 |
| 10 18         | 1 45.44                       | +15 34.7                     | 1.789    | 2.781 | 2.4     | 17.5 | 10 18         | 1 45.21                      | -6 52.2                      | 1.110    | 2.084 | 7.9     | 16.9 |
| 10 28         | 1 37.73                       | +14 32.4                     | 1.784    | 2.771 | 2.8     | 17.5 | 10 28         | 1 38.51                      | -8 8.6                       | 1.149    | 2.101 | 10.5    | 17.1 |
| 11 7          | 1 30.68                       | +13 28.7                     | 1.806    | 2.762 | 6.8     | 17.7 | 11 7          | 1 33.02                      | -8 51.0                      | 1.209    | 2.119 | 14.1    | 17.3 |
| 11 17         | 1 25.11                       | +12 30.0                     | 1.855    | 2.752 | 10.6    | 17.9 | 11 17         | 1 29.63                      | -8 58.7                      | 1.289    | 2.138 | 17.6    | 17.6 |
| 11 27         | 1 21.66                       | +11 42.1                     | 1.928    | 2.744 | 13.9    | 18.1 | 11 27         | 1 28.83                      | -8 35.0                      | 1.386    | 2.158 | 20.4    | 17.9 |
| <b>231091</b> | 2005 <i>RQ</i> <sub>14</sub>  | 10 20.9 352°99' 0.5°/20.7 18 |          |       |         |      | <b>424494</b> | 2008 <i>DN</i> <sub>43</sub> | 10 21.0 160°13' 1.4°/22.0 16 |          |       |         |      |
| 9 18          | 2 3.01                        | +11 59.9                     | 1.071    | 1.966 | 18.1    | 20.4 | 9 18          | 2 11.95                      | +15 40.1                     | 1.715    | 2.561 | 14.9    | 22.0 |
| 9 28          | 1 59.82                       | +11 32.2                     | 1.012    | 1.959 | 13.4    | 20.1 | 9 28          | 2 5.42                       | +15 34.4                     | 1.647    | 2.566 | 11.1    | 21.8 |
| 10 8          | 1 53.72                       | +10 48.2                     | 0.971    | 1.953 | 7.8     | 19.7 | 10 8          | 1 56.61                      | +15 15.2                     | 1.601    | 2.570 | 6.8     | 21.6 |
| 10 18         | 1 45.68                       | +9 53.4                      | 0.952    | 1.948 | 1.8     | 19.4 | 10 18         | 1 46.35                      | +14 44.2                     | 1.582    | 2.574 | 2.4     | 21.3 |
| 10 28         | 1 37.21                       | +8 56.6                      | 0.957    | 1.945 | 4.6     | 19.5 | 10 28         | 1 35.83                      | +14 5.9                      | 1.591    | 2.578 | 3.2     | 21.4 |
| 11 7          | 1 29.91                       | +8 7.8                       | 0.985    | 1.943 | 10.5    | 19.9 | 11 7          | 1 26.26                      | +13 26.4                     | 1.628    | 2.581 | 7.6     | 21.7 |
| 11 17         | 1 25.06                       | +7 35.2                      | 1.034    | 1.943 | 15.8    | 20.2 | 11 17         | 1 18.63                      | +12 51.7                     | 1.691    | 2.583 | 11.7    | 21.9 |
| 11 27         | 1 23.43                       | +7 23.6                      | 1.102    | 1.944 | 20.2    | 20.5 | 11 27         | 1 13.61                      | +12 27.1                     | 1.778    | 2.585 | 15.2    | 22.2 |
| <b>487405</b> | 2014 <i>QT</i> <sub>360</sub> | 10 20.9 123°80' 2.3°/23.3 18 |          |       |         |      | <b>291980</b> | 2006 <i>QM</i> <sub>86</sub> | 10 21.0 104°41' 3.3°/17.8 18 |          |       |         |      |
| 9 18          | 2 6.45                        | +19 25.3                     | 2.427    | 3.251 | 11.8    | 21.5 | 9 18          | 2 6.96                       | +3 29.4                      | 2.084    | 2.953 | 11.7    | 21.5 |
| 9 28          | 2 0.91                        | +19 28.9                     | 2.353    | 3.256 | 9.0     | 21.3 | 9 28          | 2 1.18                       | +2 23.6                      | 2.039    | 2.974 | 8.4     | 21.3 |
| 10 8          | 1 53.77                       | +19 20.3                     | 2.302    | 3.260 | 5.9     | 21.1 | 10 8          | 1 53.85                      | +1 15.6                      | 2.020    | 2.995 | 5.1     | 21.1 |
| 10 18         | 1 45.64                       | +19 0.7                      | 2.279    | 3.265 | 3.0     | 21.0 | 10 18         | 1 45.67                      | +0 11.0                      | 2.030    | 3.016 | 3.3     | 21.1 |
| 10 28         | 1 37.31                       | +18 32.4                     | 2.285    | 3.269 | 2.9     | 21.0 | 10 28         | 1 37.49                      | -0 44.2                      | 2.068    | 3.036 | 5.2     | 21.2 |
| 11 7          | 1 29.60                       | +17 59.5                     | 2.320    | 3.273 | 5.7     | 21.2 | 11 7          | 1 30.15                      | -1 25.6                      | 2.135    | 3.055 | 8.3     | 21.4 |
| 11 17         | 1 23.20                       | +17 26.5                     | 2.384    | 3.277 | 8.7     | 21.4 | 11 17         | 1 24.29                      | -1 50.4                      | 2.228    | 3.074 | 11.2    | 21.7 |
| 11 27         | 1 18.66                       | +16 57.7                     | 2.472    | 3.281 | 11.4    | 21.5 | 11 27         | 1 20.36                      | -1 57.9                      | 2.343    | 3.093 | 13.7    | 21.9 |
| <b>512856</b> | 2016 <i>VD</i> <sub>14</sub>  | 10 20.9 19°36' 7.1°/26.9 18  |          |       |         |      | <b>499836</b> | 2011 <i>DY</i> <sub>47</sub> | 10 21.0 276°25' 2.0°/19.2 17 |          |       |         |      |
| 9 18          | 2 9.37                        | +30 4.2                      | 1.733    | 2.524 | 17.0    | 20.6 | 9 18          | 2 7.10                       | +4 55.1                      | 2.445    | 3.306 | 10.5    | 21.7 |
| 9 28          | 2 3.85                        | +30 34.6                     | 1.658    | 2.524 | 14.1    | 20.4 | 9 28          | 2 1.45                       | +4 38.3                      | 2.352    | 3.283 | 7.6     | 21.5 |
| 10 8          | 1 55.84                       | +30 41.0                     | 1.602    | 2.525 | 10.9    | 20.2 | 10 8          | 1 54.18                      | +4 18.4                      | 2.285    | 3.261 | 4.5     | 21.3 |
| 10 18         | 1 46.16                       | +30 21.0                     | 1.570    | 2.526 | 8.1     | 20.1 | 10 18         | 1 45.80                      | +3 58.6                      | 2.246    | 3.238 | 2.0     | 21.0 |
| 10 28         | 1 36.07                       | +29 36.0                     | 1.564    | 2.527 | 7.1     | 20.0 | 10 28         | 1 37.09                      | +3 42.3                      | 2.238    | 3.215 | 3.8     | 21.1 |
| 11 7          | 1 26.90                       | +28 31.9                     | 1.584    | 2.527 | 8.7     | 20.1 | 11 7          | 1 28.83                      | +3 33.2                      | 2.258    | 3.192 | 7.1     | 21.3 |
| 11 17         | 1 19.79                       | +27 17.5                     | 1.629    | 2.528 | 11.6    | 20.3 | 11 17         | 1 21.78                      | +3 33.7                      | 2.306    | 3.168 | 10.3    | 21.5 |
| 11 27         | 1 15.49                       | +26 2.8                      | 1.697    | 2.530 | 14.7    | 20.5 | 11 27         | 1 16.50                      | +3 45.7                      | 2.378    | 3.144 | 13.0    | 21.6 |
| <b>334743</b> | 2003 <i>QO</i> <sub>32</sub>  | 10 20.9 9°63' 5.4°/16.5 18   |          |       |         |      | <b>286655</b> | 2002 <i>EY</i> <sub>91</sub> | 10 21.0 126°63' 2.4°/19.1 17 |          |       |         |      |
| 9 18          | 2 4.50                        | +0 55.8                      | 1.500    | 2.390 | 14.2    | 19.8 | 9 18          | 2 9.54                       | +8 27.8                      | 1.533    | 2.405 | 14.9    | 21.5 |
| 9 28          | 2 0.05                        | -0 28.0                      | 1.447    | 2.390 | 10.4    | 19.6 | 9 28          | 2 3.64                       | +7 22.0                      | 1.479    | 2.416 |         |      |